

WHO REPORT 2001



GLOBAL TUBERCULOSIS CONTROL



**COMMUNICABLE DISEASES
WORLD HEALTH ORGANIZATION
GENEVA**

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List of Abbreviations

AFB	Acid fast bacilli
AFRO	WHO African Regional Office
AMRO	WHO American Regional Office
CDR	Case detection rate (i.e. smear-positive case detection rate, whole country)
DDR	DOTS detection rate (i.e. smear-positive case detection rate under DOTS)
DOT	Directly observed treatment
DOTS	WHO TB control strategy
EMRO	WHO Eastern Mediterranean Regional Office
EURO	WHO European Regional Office
IEDC	Infectious and Endemic Disease Control Project (China)
IUATLD	International Union Against Tuberculosis and Lung Disease
NGO	Non-government organization
NTP	National Tuberculosis Control Programme
SCC	Standardized short-course chemotherapy
SEARO	WHO South-East Asia Regional Office
TB	Tuberculosis
TB80	The league of high-burden countries accounting for 80% of all new cases each year
TS	Treatment success (cured + completed) under DOTS
WPRO	Western Pacific Regional Office

Summary

Background and aims

This is the fifth annual report on global TB control, based on case notifications and treatment outcome data supplied by national control programmes to WHO. Six consecutive years of data were used to assess worldwide progress in TB control, focusing on 23 high-incidence countries that account for 80% of all new cases (the TB80 group). The main aim was to assess progress towards 2005 targets for case detection (70%) and treatment success (85%), and to begin to evaluate the epidemiological impact of diagnosing and curing larger numbers of patients. Analysis of progress from 1995 to 1999 included a revision of incidence estimates for all countries in these years, together with projections to 2005.

Methods

During 2000, a standard data collection form was sent to 211 countries via WHO Regional Offices. The form has three sections which request information about: policy and practice in TB control; the number and types of TB cases notified in 1999; and the outcomes of treatment and retreatment (DOTS areas only) for smear-positive or culture-positive (mainly Europe) cases registered in 1998.

Results

The main findings were:

1. There were an estimated 8.4 million new tuberculosis cases in 1999, up from 8.0 million in 1997; the rise is due largely to a 20% increase in incidence in African countries most affected by the epidemic of HIV/AIDS. If present trends continue, 10.2 million new cases are expected in 2005, and Africa will have more cases than any other WHO Region.
2. Following a decade of successful control, and the consequent reduction in incidence, Peru fell to bottom place in the league of high-burden countries in 1999. It was eliminated from TB80 during 2000.
3. The number of countries implementing the DOTS strategy (at least in part) increased by 8 during 1999, bringing the total to 127 (out of 211).
4. The fraction of the world's population that had access, in principle, to DOTS increased slightly from 43% in 1998 to 45% in 1999.
5. Roughly one quarter (23%) of estimated new smear-positive cases were reported to DOTS programmes in 1999, as compared with 22% in 1998; this is consistent with the average increment of about 120 000 cases in each year since 1994.
6. If this trend is maintained, the target of 70% case detection under DOTS will not be reached until 2013; to get to the target by 2005, DOTS programmes must collectively recruit at least 300 000 additional smear-positive cases each year.
7. There was an insignificant increase between 1998 and 1999 in the total number of smear-positive cases reported to WHO; about 1.4 million cases were reported in both years (41% of the estimated total).
8. Almost all (92%) of the progress in DOTS expansion, as judged by smear-positive case notifications, was made in just 5 countries; 65% of these additional cases were found in 2 countries, India and South Africa.

9. Treatment success of new smear-positive patients has remained high under DOTS, and exceeded 80% in the most recent cohort (1998).
10. Against expectation, the cure rate measured by sputum smear conversion in 12 European countries was not consistently higher than the cure rate measured by culture conversion; in order to explain this result, treatment outcomes must be examined for patients individually, rather than in aggregate.
11. In 1999, Peru and Viet Nam were still the only high-burden countries to have exceeded both WHO targets of 70% case detection and 85% treatment success. However, several other TB80 countries are within reach: they include Brazil, Cambodia, Kenya, the Philippines, South Africa and Tanzania.
12. A number of smaller countries appear to have declining TB incidence rates that are linked to high rates of case detection and cure; these include Cuba, Lebanon, the Maldives, Nicaragua, Oman and Uruguay.
13. During the preparation of this report, China announced preliminary results of a nationwide survey suggesting a comparatively large reduction in TB prevalence in 13 provinces that have participated in the IEDC TB control project since 1990.

Conclusion

Progress in global TB control has remained steady, but slow. Despite large numbers of patients recruited in India and South Africa during 1999, DOTS implementation overall was no faster than in previous years. DOTS programmes worldwide will have to increase the number of additional patients enrolled annually by a factor of 2.5 in order to meet 2005 targets. Following the impact of short-course chemotherapy in Peru (reduced incidence) and China (reduced prevalence), detailed epidemiological analyses are needed to find out whether other control programmes with high rates of case detection and cure have also succeeded in reducing TB burden.

Introduction

The goal of this report is to chart progress in TB control and, in particular, progress in implementing the WHO DOTS strategy.¹ The targets for global TB control ratified by the World Health Assembly are: (1) to treat successfully 85% of detected smear-positive TB cases, and (2) to detect 70% of all such cases. Since these targets were not reached by the end of year 2000 as originally planned, the target year has been re-set to 2005.²

Monitoring and evaluation are carried out through WHO's Global TB Monitoring and Surveillance Project, established in 1995. Last year we reported³ that:

- 45% of all estimated tuberculosis cases, and 40% of smear-positive cases, were notified to WHO for 1998.
- By the end of 1998, 119 countries had adopted, and reported on, the WHO DOTS strategy for TB control; they included all high-burden countries (numbering 22 last year).
- 43% of the global population had access to DOTS.
- 22% of estimated smear-positive cases were reported under DOTS in 1998.
- Compared with 1997, an additional 220 000 smear-positive cases were reported by DOTS programmes in 1998.
- The average treatment success rate was 78% under DOTS programmes in 1997, and 82% in high-burden countries.
- The biggest improvements in case detection were made in China, South Africa, India, Bangladesh and the Philippines.
- Countries failing to make significant progress included Indonesia, Pakistan, Russia and Uganda.
- Peru and Viet Nam were the only two high-burden countries to have met the WHO targets for case detection and cure.

We concluded that progress in global tuberculosis control accelerated slightly between 1997 and 1998; DOTS programmes recruited more cases than in any previous year, whilst maintaining high treatment success rates. However, progress was slow with respect to global targets: the data suggested that DOTS programmes would have to enrol an additional 250 000 patients each year in order to meet targets by 2005. This was more than twice the average yearly increment between 1994 and 1998.

The present report is number five in the series. It presents data available at 22 January 2001 on case notifications for 1999, treatment results for patients registered in 1998, and the status of DOTS implementation by the end of 1999. This information is supplemented, where possible, with the latest data on progress made by countries during 2000. We compared the new figures with those in previous reports (data from 1994 onwards), paying special attention to progress in countries with the largest numbers of TB cases. The results imply that much more effort will be needed if DOTS programmes, collectively, are to reach global targets by 2005.

¹ World Health Organization. *WHO Tuberculosis Programme: Framework for Effective Tuberculosis Control*. Geneva, Switzerland: World Health Organization 1994. WHO/TB/94.179.

² World Health Organization. Fifty-third World Health Assembly. Stop Tuberculosis Initiative, Report by the Director General. A53/5, 5 May 2000.

³ World Health Organization. *Global Tuberculosis Control. WHO Report 2000*. WHO/CDS/TB/2000.275. See <http://www.who.int/gtb/publications/globrep00/index.html>.

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The analysis in this year's report also includes new estimates of TB incidence in each country. The reasons for revising TB incidence rates are that case numbers have been rising sharply in African countries with the spread of HIV, and in Eastern Europe following the break-up of the former Soviet Union. There have also been some successes in TB control, which have probably reduced incidence, notably in Peru and China. The revised estimates change the denominators of case detection rates, and therefore influence our view of progress towards the 70% target. The technique we have used to estimate incidence for 1999 (the year to which all notifications in this report apply) also allows projections to 2005, assuming present trends continue. These forecasts include some sobering statistics for Africa.

Methods

WHO member states and other countries and territories voluntarily report communicable disease surveillance data to WHO. One distinctive feature of TB surveillance is the collection of data on treatment outcomes as well as disease incidence. Another is the stratification of data by type of control strategy (DOTS or non-DOTS). Together, these data are important in monitoring progress towards targets (85% treatment success, 70% case detection), and in assessing the epidemiological impact of DOTS.

Before setting out the details of methods used to collect the most recent set of data, we make four general remarks about the process. First, the questions posed on the WHO form for data collection assume that countries are able to provide precisely the information requested. We recognize, however, that some countries have slightly different definitions and procedures, and we encourage respondents to note such differences in their reports.

Second, WHO deals with national health authorities, some of whom supervise only public systems of TB control. In a number of countries, TB treatment is unregulated, case reporting by private practitioners to the local health authority is not mandatory, and legislation is not enforced, or not dictated by clear criteria and definitions. Under these circumstances, the data collected by the national health authority, and reported in turn to WHO, will be incomplete and perhaps inaccurate.

Third, this report presents data with a significant time delay. Published in 2001, it contains data that were compiled mostly during 2000. The new data available are case notifications for 1999 (the most recent year of complete information), and treatment outcomes for patients registered in 1998. Treatment results always lag notifications by one year because the most important evaluations are made at the end of treatment, which usually lasts 6–9 months. (WHO recommends that data are compiled and analysed more often than once per year within countries, e.g. quarterly, but this is unnecessary for monitoring at the global level.)

Fourth, late reports or revisions of data for previous years are incorporated into WHO's databases, so that trend data presented in this report, and on the WHO Geneva web-site, can be as up-to-date as possible (Annex 8 contains the updated global profile for 1997/8). Except for countries in the European region, there has been no systematic attempt to revise earlier data. Because some countries update their information without notifying WHO, the numbers published in this report may not agree with other publications on TB surveillance.

Accepting only the inevitable imperfections, our goal is to present the best possible appraisal of global TB control as of January 2001.

Data collection

In August 2000, we asked the national health authorities in 211 countries and territories to complete a standard TB data collection form (Annex 1). The form has detailed instructions and definitions that follow WHO/IUATLD guidelines on TB recording and reporting. The form asks for:

- programme information in 1999, i.e. national policy and typical practice, population coverage of DOTS and other, non-DOTS strategies, and completeness of reporting;
- TB cases reported during 1999, divided into various types, and including a stratification of laboratory-confirmed pulmonary cases by age and sex;
- treatment outcomes for laboratory-confirmed pulmonary cases registered during 1998, plus outcomes for all re-treatment cases in DOTS areas.

The information about policy and practice concerns the country as a whole, whereas the

other sections ask for data from DOTS and non-DOTS areas separately. Treatment and retreatment outcomes are not expected from non-DOTS programmes, but the form allows respondents to supply the former if they can do so.

Distribution of the forms for data collection was via CD-ROM, and/or fax, airmail and electronic mail, depending on regional procedures and country preferences. A utility on the CD-ROM version allows respondents to enter data directly and return an electronic file to WHO; the data in this file can be uploaded automatically to a Microsoft Access database. Otherwise, manually completed forms were faxed or delivered to the WHO local or Regional Office. Regardless of the format or mode of data transfer, reporting to WHO requires each NTP manager to assemble data as per WHO instructions, from various sub-national (district, provincial) periodic reports (quarterly, semi-annually), or directly from individual case reports, using whatever technology is available. The WHO form, and the means provided for its transmission, are not intended to be tools for surveillance and monitoring within countries.⁴

Completed forms were first reviewed in the relevant WHO country and Regional Office, and then by the Communicable Diseases programme in Geneva. Inconsistencies in the data were followed up with NTP managers, or with other responsible persons in countries. Data were entered in computer files at WHO headquarters and regional levels, and analysed principally with Microsoft Access and Excel 97.

Surveillance in the European Region

In the WHO European Region, tuberculosis monitoring and surveillance are carried out jointly with EuroTB (Institut de Veille Sanitaire, Paris), the WHO Collaborating Centre for the surveillance of tuberculosis in Europe, with financial support from the European Commission. This year, for the first time, a joint WHO/EuroTB data collection form was sent to countries, designed to meet the overlapping objectives of both organizations, and to minimize double reporting by NTP managers. In addition to the information requested on the global form, the WHO/EuroTB form asks for definitions used and reporting requirements in each country, notifications by nationality, citizenship, age and sex, and notifications and treatment outcomes by sputum culture and smear examination (Annex 1).

In the European Region only, national respondents were invited to report to WHO directly via the regional web-site (<http://cisid.who.dk/tb>). This system provides messages to help check data on entry, and immediate feedback on the TB situation in neighbouring countries, using a menu for custom queries of the regional database.

The WHO/EuroTB collaboration brings several mutual benefits. First, data can be cross-checked more carefully by a larger number of staff. Second, EuroTB continues to compile and refine data throughout the year; this information is used to update the Geneva database, and can then be further disseminated via both EuroTB and WHO networks. Third, the extra information on the European form allows a fuller analysis of TB epidemiology in the region. For example, the present report contains a preliminary comparison of treatment outcomes by smear and culture conversion.

Categorization of countries

From the responses as a whole (but particularly the section on policy), we accepted or revised each country's own determination of its DOTS status. Countries were then further categorized qualitatively (or semi-quantitatively), as shown in Figure 1, using definitions in Table 1. A country was considered as implementing the DOTS strategy if by 31 December 1999 it had a national TB control policy based on WHO recommendations, complied with all technical elements of the DOTS strategy⁵ (Table 2), and reported on notifications and treatment outcomes from DOTS areas.

⁴ WHO offers reference material about national recording and reporting systems, and prototype software designed for national or provincial TB managers to assemble, clean, and analyse their TB data. For further information, contact local or Regional WHO offices, or bleedd@who.int.

⁵ WHO/IUATLD/KNCV. *Revised international definitions in tuberculosis control*. Geneva, Switzerland: World Health Organization 2000. Unpublished document.

Table 1. Categorization of countries

Category	Definition
0	Countries not reporting to WHO.
1	Countries not implementing the DOTS strategy and having an estimated incidence rate of 10 or more cases per 100 000 population.
2	Countries implementing the DOTS strategy in less than 10% of the total population (pilot phase).
3	Countries implementing the DOTS strategy in 10 to 90% of the total population (expansion phase).
4	Countries implementing the DOTS strategy in over 90% of the total population (routine implementation).
5	Countries not implementing the DOTS strategy but having an estimated incidence rate of less than 10 cases per 100 000 population (low incidence).

Table 2. Technical elements of the WHO TB control strategy (DOTS)

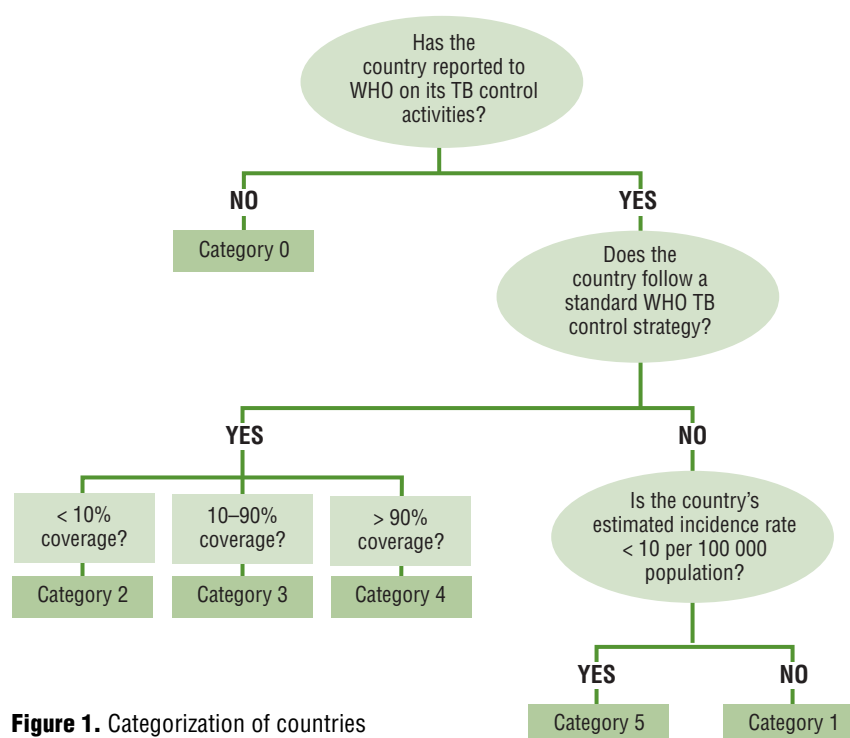
Microscopy	Case detection among symptomatic patients self-reporting to health services, using sputum smear microscopy*.
SCC/DOT	Standardized short-course chemotherapy using regimens of 6–8 months for at least all confirmed smear-positive cases. Good case management includes directly observed therapy (DOT) during the intensive phase for all new sputum positive cases, during the continuation phase of regimens containing rifampicin, and during the entirety of a retreatment regimen**.
Drug Supply	Establishment and maintenance of a system to supply all essential anti-tuberculosis drugs, and to ensure no interruption in their availability.
Recording and Reporting	Establishment and maintenance of a standardized recording and reporting system, allowing assessment of treatment results (see Table 5).

* Sputum culture can be used for diagnosis, but direct sputum smear microscopy should still be performed for all suspected cases.

** In countries that have consistently documented high treatment success rates, Directly Observed Therapy 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.

If DOTS was implemented only in some districts (or equivalent administrative units) on the initiative of local authorities, but endorsed by national authorities, the country was classified as DOTS. If a country reported that DOTS was newly implemented during 1999, so that the results of cohort analysis were not yet available, it was also classified as DOTS, provided 1999 case notifications from DOTS areas were available.

This system of categorization provides a first impression of each country's progress in TB control. However, WHO targets are expressed more stringently in terms of treatment success and the case detection rate. TB control should ensure high treatment success before expanding case finding. 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 country-wide coverage. Case detection and treatment success rates are defined and measured as follows.

**Figure 1.** Categorization of countries

Case detection

We made separate assessments of TB control programmes in DOTS and non-DOTS areas. Case notifications distinguished between all types of TB and sputum smear-positive cases (or culture-positive cases, in some countries). Table 3 contains standard case definitions, including minor

Table 3. Definitions of tuberculosis cases

Case of tuberculosis	A patient in whom tuberculosis has been bacteriologically confirmed, or has been diagnosed by a clinician. Note: any person given treatment for tuberculosis should be recorded.
Definite case	Patient with positive culture for the <i>Mycobacterium tuberculosis</i> 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.
Smear-positive pulmonary case	At least two initial sputum smear examinations (direct smear microscopy) AFB+; or one sputum examination AFB+ and radiographic abnormalities consistent with active pulmonary tuberculosis as determined by the treating medical officer; or one sputum specimen AFB+ and culture positive for <i>M. tuberculosis</i> .
Smear-negative pulmonary case	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 the patient with a full course of anti-tuberculosis therapy; or positive culture but negative AFB sputum examinations.
Extrapulmonary case	Patient with tuberculosis of organs other than the lungs e.g. pleura, lymph nodes, abdomen, genito-urinary 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-tuberculosis chemotherapy. Note: a patient diagnosed with both pulmonary and extrapulmonary tuberculosis should be classified as a case of pulmonary tuberculosis.
New case	Patient who has never had treatment for tuberculosis, or who has taken anti-tuberculosis drugs for less than 1 month.
Relapse case	Patient previously declared cured but with a new episode of bacteriologically positive (sputum smear or culture) tuberculosis.
Retreatment case	Patient previously treated for tuberculosis whose treatment failed, who defaulted (treatment interrupted, see Table 5, 'Definitions of treatment outcomes'), or who relapsed.
Chronic case	Patient who is sputum positive at the end of a retreatment regimen.

revisions made during 2000.⁶ As an indicator of each NTP's ability to detect and identify smear-positive cases we calculated the proportion of new sputum smear-positive cases out of all new pulmonary cases (expected value 55–70% in areas with low prevalence of HIV infection).

Case notifications represent only a fraction of the true number of cases arising in a country because of incomplete coverage by health services, inaccurate diagnosis, or deficient recording and reporting. The estimated smear-positive case detection rate is defined as:

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

A stricter measure of case finding is the fraction of all incident smear-positive cases which are detected (and potentially treated) by DOTS programmes:

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

Case detection rate (CDR) and DOTS detection rate (DDR) are identical when a country reports only from DOTS areas. This should happen only when DOTS coverage is 100%.

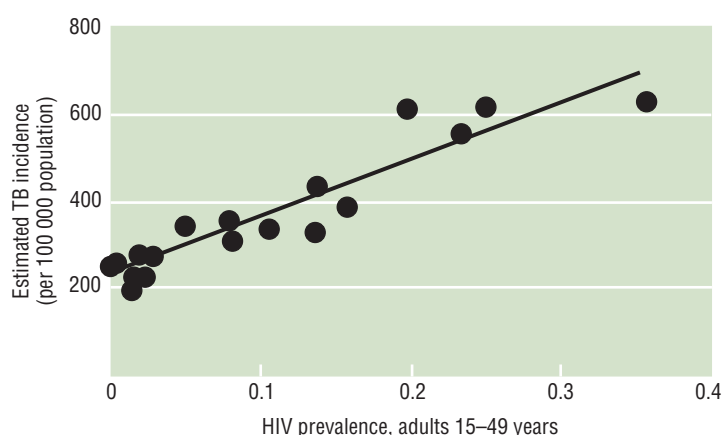
⁶ WHO/IUATLD/KNCV. *Revised international definitions in tuberculosis control (2000)*. Unpublished document available from WHO Geneva.

Estimated TB incidence, 1995–2005

The denominators for 1999 case detection rates are 1999 estimates of the smear-positive incidence rate, obtained from a revision of published 1997 estimates.⁷ The methods used to make the 1999 revision, and the results, will be described in full elsewhere. In brief:

1. For each of 19 African countries that report TB cases consistently and with clear trends, estimated incidence rates for 1997 have been adjusted according trends in the notification rate. This assumes that there has been no significant change in the proportion of cases detected. The resulting estimates for 1999 are closely correlated with the estimated prevalence of HIV in adults 15–49 years old ($r^2 = 87\%$, Figure 2). The corresponding linear regression has been used as a calibration curve to estimate the TB incidence rate for 41 countries in the WHO African Region (including the original 19 countries, but excluding 5 groups of islands). This new method replaces the previous, less satisfactory approach of dividing case notification rates by the supposed proportion of cases detected, where the latter was typically based on few data for countries other than those represented in Figure 2.
2. 113 countries outside the WHO African Region have also provided notification data with interpretable trends, and with no other evidence (e.g. from NTP activities) for any significant change in the case detection rate. We therefore assumed, as for the 19 African countries above, that trends in the notification rate represent trends in the incidence rate, and adjusted the estimated 1997 incidence rates accordingly. Some of these adjustments produced very small increases or decreases in the incidence rate but, for consistency, we applied the same technique to all countries that have decipherable trend data.
3. China carried out a country-wide disease prevalence survey during 2000, and the preliminary results (as of 22 January 2001) have been used to re-evaluate incidence for 1999.
4. For the remaining 56 countries, case notifications could not be used to assess trends in incidence, either because they were too inconsistent, or because independent information suggested that the case detection rate has changed through time (for better or worse). For these countries we applied the trend for one of eight groups of epidemiologically similar countries. The trend was the weighted case notification rate for the countries and groups shown in Figure 9 and Table 9. For example, the Philippines was aligned with non-industrialized Western Pacific countries (defined as Wpr B & D in World Health Report 2000⁸).
5. The information on trends obtained from the series of case notifications, both in and out of Africa, was used to back-calculate incidence to 1995, and to project forward to 2005. We computed incidence rates over this 10-year period for all countries, using the country trends for 133, and the regional trends for the other 78.
6. Finally, the numbers of new cases arising in all countries were calculated by multiplying estimated incidence rates by estimated population sizes.⁹

Figure 2. Relationship between estimated incidence of TB (all forms) and HIV prevalence in adults for 18 African countries in 1999 (HIV data supplied by UNAIDS)



⁷ Dye C, Scheele S, Dolin P, Pathania V, Raviglione MC. Global burden of tuberculosis: estimated incidence, prevalence and mortality by country. *JAMA* 1999; 282: 677–686.

⁸ World Health Organization. *World Health Report 2000. Health Systems: Improving Performance*. Geneva: World Health Organization.

⁹ UN Population Division, *World Population Prospects, 1998 revision*.

Treatment success and cure rate

To assess the quality of treatment programmes for new infectious cases, we first compared the number of new cases registered for treatment in 1998 (reported in 1999) with the number of cases notified as smear-positive in 1998 (reported in 1998). These numbers should be the same. Differences may arise because NTPs do not compile data at the end of each calendar year, because diagnoses are incorrect, because patients are lost between diagnosis and the start of treatment, or because records are lost. Second, we determined what fraction of registered cases was evaluated for outcome. All registered cases should be evaluated. Third, we compiled data on the

six standard, mutually exclusive outcomes of treatment (Table 4). Treatment success is defined as the proportion of patients who were cured plus the proportion who completed treatment. These figures are reported as percentages of all registered cases, so that the six possible outcomes plus the fraction of cases not evaluated sum to 100%. Sometimes, countries state the number of patients registered for treatment, but give no outcomes. When this happens, we report no result, rather than zero treatment success (Table 14). In other instances, the number of registered cases is less than the sum of the six outcomes (i.e. the number evaluated), or is missing. In such instances we take the denominator for treatment success to be the number evaluated or the number of smear-positive cases notified in the previous year, whichever is greater. Although treatment outcomes are expressed as percentages, they are usually referred to as 'rates'.

Table 4. Definitions of treatment outcomes

Cured	Initially smear-positive patient who has a negative sputum smear in the last month of treatment, and on at least one previous occasion*.
Completed treatment	Patient who has completed treatment but does not meet the criteria for cure or failure.
Died	Patient who died during treatment, irrespective of cause.
Failed	Smear-positive patient who remained smear-positive, or became smear-positive again, at least 5 months after the start of treatment.
Interrupted treatment (defaulted)	Patient who did not collect drugs for 2 months or more at any time after registration.
Transferred out	Patient who was transferred to another reporting unit and for whom treatment results are not known.
Successfully treated	The sum of cases who were cured and who completed treatment (expressed as a percentage of the number registered in the cohort**).

* Some European countries define cure in terms of culture conversion, rather than sputum smear conversion¹⁰

** A cohort is a group of patients diagnosed and registered for treatment during a given time period, usually one quarter of a year.

Data describing the outcome of retreatment were collected only from DOTS areas because the definitions of failure and relapse require data on bacteriological conversion (Tables 3 and 4). We have not attempted to assess how many cases should have been registered on retreatment regimens, to compare with the number that were actually registered.

In addition, 1998 cohort data from a selection of European countries were used to compare cure (and treatment failure) judged by sputum smear or culture conversion. Cure by smear conversion from positive to negative was for all patients initially diagnosed with positive smears, including those that with positive cultures. Reciprocally, culture conversion was measured for all patients initially diagnosed with positive cultures, including those with positive smears. We looked for systematic differences in cure and failure rates measured by the two methods. Because data were not available for individual patients, we compared treatment results for groups of patients, across all countries.

¹⁰ Veen J, Raviglione MC, Rieder HL, Migilori GB, Graf P, Grzemska M, Zalesky R. Standardized tuberculosis treatment outcome monitoring in Europe. *Eur Respir J* 1998; 12: 505–510.

Results

Global and regional progress in TB control

Countries reporting to WHO

By 22 January 2001, 171 (81%) of 211 countries reported case notifications for 1999 and/or treatment outcomes for patients registered in 1998, 18 fewer than last year. We received reports from all high-burden countries except Mozambique, all countries with more than 30 million people except Canada, and all other countries with more than 10 million people except Yemen, Madagascar and Niger (Tables 5a and 5b).

Table 5a. List of countries implementing DOTS, 1999

Category 2 (9 countries)	Category 3 (47 countries)	Category 4 (71 countries)
Brazil	Afghanistan	American Samoa
Democratic People's Republic of Korea (the)	Angola	Andorra
Lithuania	Argentina	Bahamas (the)
Pakistan	Armenia	Bahrain
Papua New Guinea	Australia	Barbados
<i>Romania</i>	Azerbaijan	Benin
Russian Federation (the)	Bangladesh	Bhutan
Tajikistan	Cameroon	<u>Bolivia</u>
Uzbekistan	China	<u>Bosnia and Herzegovina</u>
	China, Hong Kong SAR	Botswana
	<i>Colombia</i>	Burkina Faso
	Cook Islands	<u>Burundi</u>
	Costa Rica	Cambodia
	<i>Côte d'Ivoire</i>	Chad
	Democratic Republic of the Congo (the)	Chile
	Dominican Republic (the)	Cuba
	Ecuador	Cyprus
	Egypt	Czech Republic (the)
	El Salvador	Djibouti
	Eritrea	Fiji
	Ethiopia	French Polynesia
	Ghana	Georgia
	<i>Guatemala</i>	Guinea
	<u>Haiti</u>	Hungary
	<u>Honduras</u>	<u>Iran (Islamic Republic of)</u>
	<u>India</u>	Israel
	Indonesia	Jamaica
	Iraq	Jordan
	Italy	<u>Kazakhstan</u>
	Mali	Kenya
	Marshall Islands (the)	Kiribati
	Mauritania	Kyrgyzstan
	Mexico	Latvia
	Myanmar	Lebanon
	Nepal	Libyan Arab Jamahiriya (the)
	Nigeria	Malawi
	Panama	Maldives
	Philippines (the)	
	<u>Poland</u>	
	Saudi Arabia	
	Somalia	
	South Africa	
	Sudan (the)	
	Syrian Arab Republic (the)	
	Thailand	
	Vanuatu	
	<i>Zimbabwe</i>	
		Malta
		Mauritius
		Monaco
		Mongolia
		Morocco
		Namibia
		Netherlands (the)
		Nicaragua
		Norway
		Oman
		Peru
		Portugal
		Puerto Rico
		Qatar
		Rwanda
		Saint Kitts and Nevis
		<u>Saint Lucia</u>
		Samoa
		San Marino
		Senegal
		Slovakia
		Slovenia
		Solomon Islands
		Sri Lanka
		Tonga
		Trinidad and Tobago
		Tunisia
		Turks and Caicos Islands
		Uganda
		United Republic of Tanzania (the)
		United States of America (the)
		Uruguay
		Venezuela
		Viet Nam

Bold: countries which adopted DOTS in 1999

Italics: countries which moved one or more categories down since 1998 due to decrease in coverage

Underline: countries which moved one or more categories up since 1998

Table 5b. List of countries not implementing DOTS or not reporting to WHO, 1999

Category 0 (40 countries)	Category 1 (38 countries)	Category 5 (6 countries)
Anguilla	New Caledonia	Antigua and Barbuda
Belize	Niger (the)	Cayman Islands
Bermuda	Saint Vincent and the Grenadines	Iceland
British Virgin Islands	Seychelles	New Zealand
Brunei Darussalam	Sierra Leone	Sweden
Canada	St. Helena	Switzerland
<i>Cape Verde</i>	Swaziland	
China, Macao SAR	Togo	
Comoros (the)	<i>Tuvalu</i>	
Dominica	<i>United Arab Emirates (the)</i>	
Equatorial Guinea	United States Virgin Islands	
Gambia (the)	Wallis and Futuna Islands	
<i>Grenada</i>	<i>West Bank and Gaza</i>	
Guam	Yemen	
Guinea-Bissau	Zambia	
<i>Guyana</i>		
<i>Kuwait</i>		
Lao People's Democratic Republic (the)		
Lesotho		
Liberia		
Madagascar		
<i>Micronesia (Federated States of)</i>		
Mozambique		
Nauru		
Netherlands Antilles		
	Albania	
	Algeria	
	Austria	
	Belarus	
	Belgium	
	Bulgaria	
	Central African Republic (the)	
	Croatia	
	Congo (the)	
	Denmark	
	Estonia	
	Finland	
	France	
	Gabon	
	Germany	
	Greece	
	Ireland	
	Japan	
	Luxembourg	
	Malaysia	
	Montserrat	
	Niue	
	Northern Mariana Islands (Commonwealth of)	
	<u>Palau</u>	
	Paraguay	
	<u>Republic of Korea (the)</u>	
	Republic of Moldova (the)	
	Sao Tome and Principe	
	Singapore	
	Spain	
	Suriname	
	The former Yugoslav Republic of Macedonia	
	Tokelau	
	Turkey	
	Turkmenistan	
	Ukraine	
	United Kingdom of Great Britain and Northern Ireland (the)	
	Yugoslavia	
		Bold: countries which reported in 1998 and were classified as DOTS, but did not report in 1999
		<i>Italic:</i> countries which reported in 1998 and were classified as non-DOTS, but which didn't report in 1999
		<u>Underline:</u> countries which reported in 1999, and were classified as DOTS in 1998 but not in 1999

A growing number of European countries are submitting data via the CISID web-site, using either in English or Russian versions. Fourteen used CISID to provide data for this report: Estonia, Finland, Georgia, Germany, Iceland, Latvia, Macedonia, Netherlands, Norway, Portugal, Slovakia, Slovenia, Sweden and Turkmenistan. Fourteen countries in other regions used the CD-ROM to supply data electronically to WHO. A further nine countries used the CD-ROM for data entry, but supplied a printout of the form to WHO.

Categorization of countries, 1995–99

The number of countries implementing a strategy consistent with DOTS has continued to increase, reaching 127 (60%) in 1999, 8 more than in 1998 (Figure 3, Table 5a). Sixteen countries classified as DOTS based on 1998 data did not report 1999 data. Of the 211 countries and territories, 71 had implemented DOTS in over 90% of the country (category 4; Figures 4 and 5). Nine countries were in the DOTS pilot phase (category 2), and 47 were in the expansion phase (category 3). Since 1995, countries have been moving out of category 1 and into categories 2 to 4 (Figure 4).

By the end of 1999, 82% of the world's population was living in countries that had adopted DOTS (categories 2–4). Reported DOTS population coverage was greatest in the American (62%), Western Pacific (57%) and African Regions (55%) (Figure 6). Table 6 tabulates DOTS coverage for each high-burden country, and for the whole world, from 1995 to 1999.

Seventeen countries implemented DOTS for the first time in 1999 (Table 5a). Three had achieved limited coverage (< 10%, Category 2), DPR Korea, Lithuania and Tajikistan. Five achieved moderate coverage (10–90%, Category

Figure 3. Number of countries implementing DOTS, 1990–99

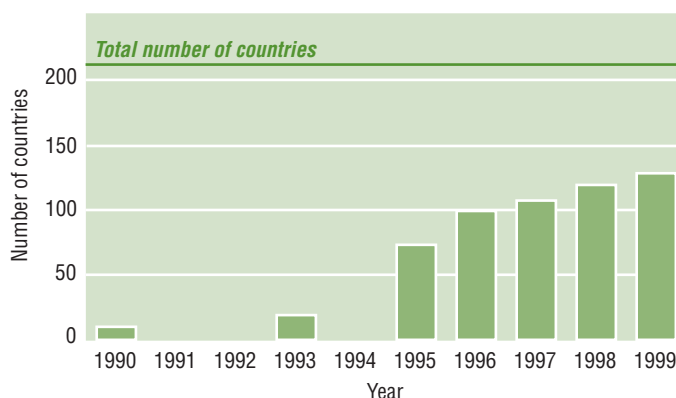


Figure 4. Changes in the categorization of countries, 1995–99, according to the scheme in Figure 1

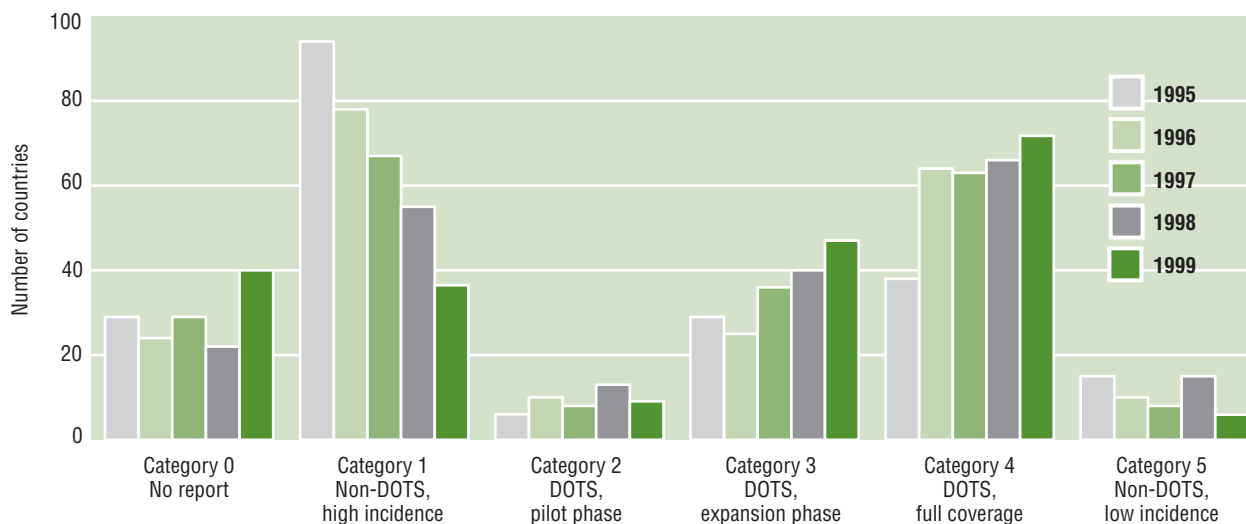


Figure 5. Proportions of countries with different levels of DOTS coverage, 1999

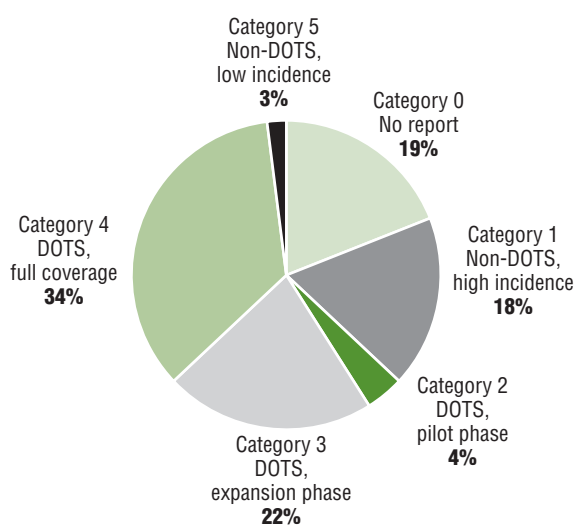


Figure 6. DOTS population coverage by WHO Region, 1999. Each bar shows the population of the region, and the shaded portion of the bar shows the population covered by DOTS. The number above each bar is the percent of the population covered. AFR: African region; EMR: Eastern Mediterranean Region; EUR: European Region; SEAR: South-East Asian Region; WPR: Western Pacific Region.

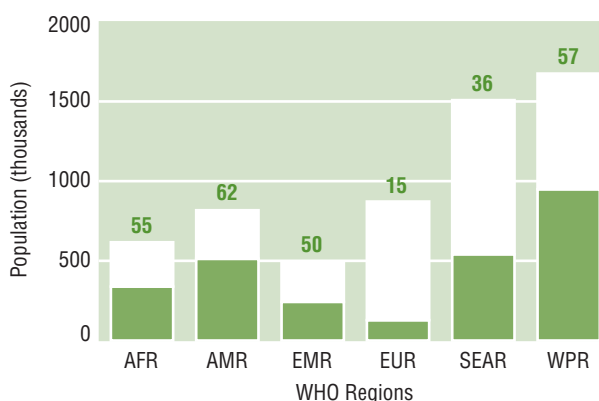


Table 6. Progress in DOTS implementation: 23 high-burden countries, 1995–99

		Percent of population covered by DOTS				
		1995	1996	1997	1998	1999
1	India	1.5	2.0	2.3	9.0	14
2	China	49	60	64	64	64
3	Indonesia	6.0	14	28	80	90
4	Nigeria	47	30	40	45	45
5	Bangladesh	41	65	80	90	90
6	Pakistan	2.0	8.0		8.0	8.0
7	Philippines	4.3	2.0	15	17	43
8	Ethiopia	39	39	48	64	63
9	South Africa			13	22	66
10	Russian Federation		2.3	2.3	5.0	5.0
11	DR Congo	47	51	60	60	62
12	Viet Nam	50	95	93	96	99
13	Kenya	15	100	100	100	100
14	Brazil		0.0	0.0	3.0	7.0
15	UR Tanzania	98	100	100	100	100
16	Thailand		1.1	4.0	32	59
17	Mozambique	97	100	84	95	
18	Myanmar		59	60	60	64
19	Uganda		0.0	100	100	100
20	Afghanistan			12	11	14
21	Zimbabwe		0.0	0.0	100	12
22	Cambodia	60	80	88	100	100
23	Peru	100	100	100	100	100
23 high-burden countries		24	32	35	43	46
Global		22	32	35	43	45

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

3), including China Hong Kong SAR, Costa Rica, Mauritania and Saudi Arabia. The remaining nine reached high coverage (> 90%), including Libya and Tunisia. Among the four countries that moved up to category 3 in 1999 were Haiti, India and Poland. Bolivia, Iran and Kazakhstan were the biggest of six countries that reached full coverage (category 4). Sixteen countries that had implemented DOTS by 1998 failed to provide data for 1999, including Mozambique, Madagascar and Niger (Table 5b).

Case notifications, 1995–99

The 171 countries reporting to WHO notified a total of 3 689 822 cases (62 per 100 000 population), of which 1 485 783 (40%) were sputum smear-positive (Table 7). These totals are nearly the same as for 1998.

Among all cases reported for 1999, 1 679 086 (46%) originated in DOTS areas (Table 7), a 7% increase on 1998. Of the smear-positive cases, 868 374 (58%) were reported from DOTS areas, 4% higher than in 1998. The African (17%), South-East Asia (41%) and Western Pacific Regions (22%) together accounted for 80% of all notified cases and similar proportions of sputum smear-positive cases (Figure 7).

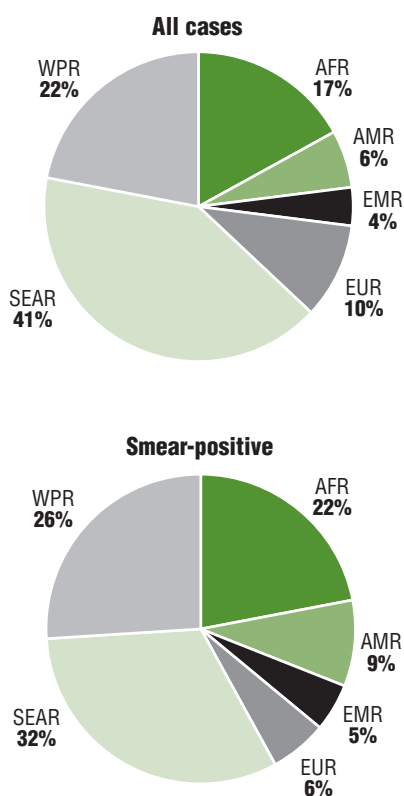


Figure 7. (left) Proportions of all notified cases, and smear-positive cases, by WHO Region, 1999. Abbreviations are as in Figure 6

Figure 8. (below) Global trend in the case notification rate, 1980–99

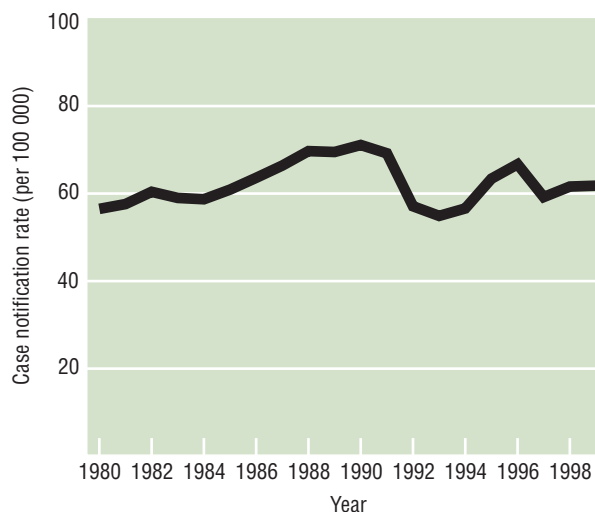


Table 7. Summary of notifications by WHO region, 1999

		% of pop*	Notifications		New ss+ notifs	% of new pulmonary cases smear-positive
			Number	%		
AFR	DOTS	55	571 158	89	278 725	63
	non-DOTS	33	73 814	11	42 535	77
	no report	12				
	Total		644 972		321 260	
AMR	DOTS	63	117 240	50	68 241	73
	non-DOTS	33	116 583	50	65 122	65
	no report	4.0				
	Total		233 823		133 363	
EMR	DOTS	50	88 881	57	43 906	74
	non-DOTS	45	67 756	43	23 229	41
	no report	4.7				
	Total		156 637		67 135	
EUR	DOTS	14	65 361	18	18 596	38
	non-DOTS	86	297 171	82	67 675	29
	no report	0.0				
	Total		362 532		86 271	
SEAR	DOTS	36	338 224	23	176 793	61
	non-DOTS	64	1 131 448	77	308 997	29
	no report	0.0				
	Total		1 469 672		485 790	
WPR	DOTS	57	498 222	61	282 113	62
	non-DOTS	43	323 955	39	109 851	38
	no report	0.4				
	Total		822 177		391 964	
Global	DOTS	45	1 679 086	46	868 374	62
	non-DOTS	52	2 010 727	54	617 409	35
	no report	2.3				
	Total		3 689 813		1 485 783	

* Percent of population: the regional DOTS population includes only that portion of the population of DOTS countries that is covered by DOTS.

Table 8. Case notifications: 23 high-burden countries, 1999

Country (ranked by burden)	Number notified				% of new pulmonary cases smear-positive	
	All cases		Smear-positive		DOTS	non-DOTS
	DOTS	non-DOTS	DOTS	non-DOTS		
1 India	120 279	1 102 848	53 034	296 736	55	29
2 China	346 200	113 969	188 525	23 901	57	22
3 Indonesia	69 064		49 172		74	
4 Nigeria	24 143		15 903		74	
5 Bangladesh	71 343	7 996	34 047	3 774	52	100
6 Pakistan	4 671	16 265	2 269	3 979	58	25
7 Philippines	31 825	113 982	20 477	52 896	67	51
8 Ethiopia	72 095		21 457		44	
9 South Africa	90 278	38 777	54 404	23 667	82	80
10 Russian Federation	3 820	130 540	1 274	20 470	39	18
11 DR Congo	59 531		34 923		81	
12 Viet Nam	88 426	453	53 561	244	75	70
13 Kenya	57 266		27 197		57	
14 Brazil	4 060	74 400	2 108	39 326	61	63
15 UR Tanzania	52 437		24 125		59	
16 Thailand	29 413		14 934		57	
17 Mozambique						
18 Myanmar	19 626		11 458		71	
19 Uganda	34 994		18 149		59	
20 Afghanistan	3 314		1 669		70	
21 Zimbabwe	50 138		14 414		34	
22 Cambodia	19 266		15 744		96	
23 Peru	40 345		24 511		82	
total, high-burden countries	1 292 534	1 599 230	683 355	464 993	62	32
Global total	1 679 086	2 010 736	868 374	617 409	62	35

* Expected percentage of new pulmonary cases which is smear positive is 55–70%

In DOTS areas, 52% of all new cases were smear-positive (45–60% expected), compared with 31% in other areas. Sixty-two percent of new pulmonary cases were sputum smear-positive in DOTS areas (55–70% expected), compared with 35% elsewhere (Tables 7 and 8).

Although the case notification rate has remained approximately stable since 1980 (Figure 8), the number of cases enrolled in DOTS programmes has increased linearly. The annual increments in smear-positive cases detected by DOTS programmes in the five years 1995 to 1999 were 140 453, 80 596, 190 309 and 98 442, averaging 127 450 extra cases each year. For all forms of TB, the average increment under DOTS has been 255 858 cases each year.

Table 9. Groups of countries used to estimate regional trends in incidence, and groups of countries where incidence was estimated using regional trends

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

*/** To estimate trends, data were aggregated for two groups of islands (marked by * and **) in each of the Latin American and Western Pacific Regions

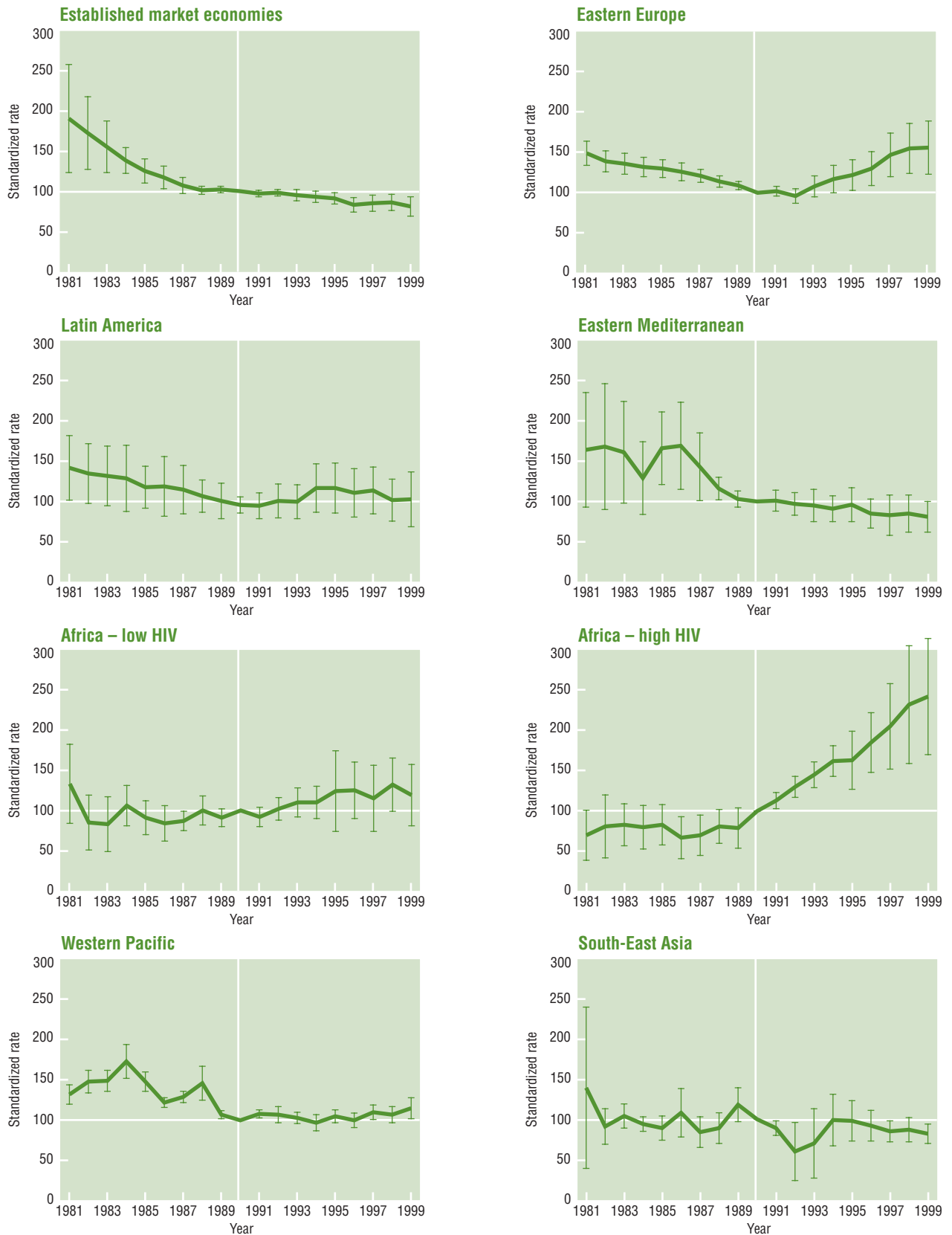
§ Countries, and groups of countries, for which estimates were derived from new information

§§ Trends based on prevalence surveys of infection and disease

Regional groupings correspond with those in WHR 2000⁷:

Established Market Economies = AMR A + EUR A + WPR A, Eastern Europe = EUR B + EUR C, Africa – low HIV = AFR D, Africa – high HIV = AFR E, Latin America = AMR B + AMR D, SEAR = WHO South East Asia Region, WPR = WHO Western Pacific Region.

Figure 9. Trends in case notification rates for selected countries in different regions, 1980–1999. To highlight trends in notifications within regions, the rates for all countries have been expressed relative to an arbitrary standard of 100 in 1990. Error bars are 95% CL on the standardized (unweighted) rates. Countries selected in each region are those for which case notifications were judged to represent trends in incidence over the period 1980–1999, as listed in table 9.



Estimated TB incidence, 1995–2005

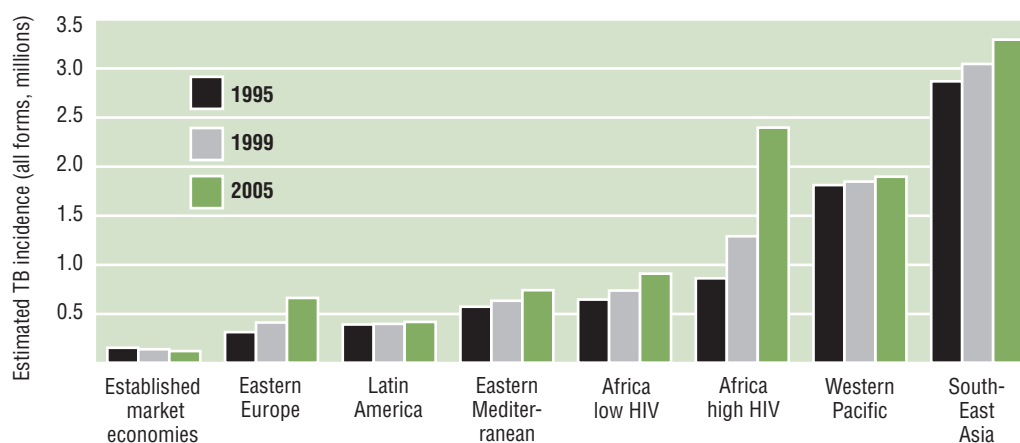
Figure 9 shows the series of case notifications that were used to judge trends in incidence, for the groups of epidemiologically similar countries listed in Table 9. Notification rates were standardized to 100 in 1990, in order to reveal trends more clearly by eliminating the absolute differences between countries in that year. Table 10 contains the estimated numbers of new cases (all forms and smear-positive) in 1999, globally and for the highest-burden countries. Twenty-three coun-

Table 10. Estimated incidence of TB: 23 high-burden countries, 1999

Country (ranked by burden)	Population (1000s)	Number Estimated					Change in rank 97 to 99*
		All cases		Smear-positive cases		Cumulative incidence (%)	
		Thousands	Rate per 100 000 pop	Thousands	Rate per 100 000 pop		
1 India	998 056	1 847	185	827	83	22	0
2 China	1 266 838	1 300	103	584	46	37	0
3 Indonesia	209 255	590	282	265	127	44	0
4 Nigeria	108 945	327	301	142	130	48	2
5 Bangladesh	126 947	306	241	138	108	52	-1
6 Pakistan	152 331	269	177	121	79	55	-1
7 Philippines	74 454	234	314	105	141	58	0
8 Ethiopia	61 095	228	373	96	157	61	1
9 South Africa	39 900	197	495	80	201	63	-1
10 Russian Federation	147 196	181	123	81	55	65	1
11 DR Congo	50 335	151	301	65	130	67	1
12 Viet Nam	78 705	149	189	67	85	69	-2
13 Kenya	29 549	123	417	51	173	70	2
14 Brazil	167 988	118	70	53	31	72	-1
15 UR Tanzania	32 793	112	340	47	145	73	-1
16 Thailand	60 856	86	141	38	62	74	0
17 Mozambique	19 286	79	407	33	169	75	9
18 Myanmar	45 059	76	169	34	76	76	-1
19 Uganda	21 143	72	343	31	146	77	0
20 Afghanistan	21 923	71	325	32	146	77	-2
21 Zimbabwe	11 529	65	562	26	226	78	0
22 Cambodia	10 945	61	560	27	251	79	0
23 Peru	25 230	58	228	26	102	80	-3
total, 23 high-burden countries	3 760 358	6 700	178	2 969	79	80	
Global total	5 975 045	8 417	141	3 724	62	100	

* change in rank resulting from re-estimation of incidence. A positive value indicates that a country has moved up the table

Figure 10. Estimated numbers of TB cases in 1995 (black), 1999 (grey) and 2005 (green), by region. Regions are as defined in Figure 9



tries accounted for 80% of all new cases, henceforth referred to as TB80. The global total rose to 8.42 million in 1999, up from 7.96 million¹¹ in 1997 (or 7.98 million from back-calculation). Nigeria, Ethiopia, Kenya, DR Congo and Russia are now ranked higher in TB80 than in 1997. Mozambique has joined the league of high-burden countries. Peru has dropped to 23rd and final place in 1999, and was relegated from TB80 during 2000.

The total numbers of cases are predicted to increase in all regions up to 2005, except in the established market economies (decline 2–3%/year, Figure 10). The rate of increase is 3%/year on average, but much higher in those African countries most affected by HIV (10%/year), and in Eastern Europe (8%/year). If present trends continue, we expect 10.2 million new cases in 2005, and more cases in the WHO African Region (3.4 million) than in any other, including South East Asia (3.2 million).

Case detection rate, 1995–99

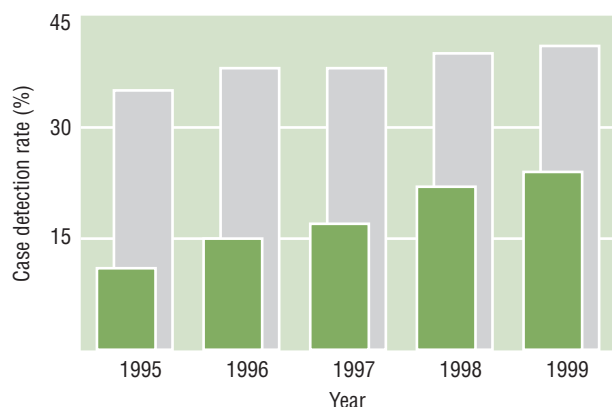
The 3 689 813 cases of tuberculosis (all forms) notified in 1999 represent 44% of the 8.42 million estimated cases; the total of 1 485 783 new smear-positives is 40% of 3.72 million estimated cases (Tables 6, 8, 11). Twenty percent of all estimated cases, and 23% of estimated smear-positive cases, were detected under DOTS. The detection rate of smear-positive cases within DOTS programmes has been rising faster than the overall smear-positive detection rate (Figure 11, Table 11). Case detection rates in 1999 were lowest in the Eastern Mediterranean Region and highest in Europe and the Americas (Figure 12).

Table 11. Detection of new smear-positive cases: 23 high-burden countries, 1995–99

Country (ranked by burden)	DOTS Programmes					Whole country				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
1 India	0.3	0.8	1.0	1.5	6.4	33	36	34	35	42
2 China	16	24	25	33	32	23	29	32	37	36
3 Indonesia	1.4	4.6	7.5	12	19	12	*	*	*	*
4 Nigeria	8.1	13	8.7	10	12	*	*	*	*	*
5 Bangladesh	6.8	15	19	24	25	15	22	24	28	28
6 Pakistan	0.9	1.6	—	3.5	1.9	2.3	*	—	13	5.2
7 Philippines	0.9	0.5	3.2	10	20	98	88	83	70	70
8 Ethiopia	0.4	19	20	22	22	*	22	*	*	*
9 South Africa	—	—	6.2	22	68	2.5	61	82	112	97
10 Russian Federation	—	0.4	0.9	0.9	1.6	62	65	60	56	27
11 DR Congo	44	50	47	57	53	47	*	*	*	*
12 Viet Nam	30	59	77	81	80	60	77	83	83	80
13 Kenya	58	58	54	57	53	*	*	*	*	*
14 Brazil	—	—	—	4.1	4.0	79	80	80	72	79
15 UR Tanzania	61	60	56	55	51	*	*	*	*	*
16 Thailand	—	0.3	5.0	21	40	55	46	35	*	*
17 Mozambique	49	44	42	41	—	*	*	*	*	—
18 Myanmar	—	26	27	30	33	26	29	29	*	*
19 Uganda	—	—	63	63	59	57	59	*	*	*
20 Afghanistan	—	—	2.0	5.8	5.2	—	—	*	*	*
21 Zimbabwe	—	—	—	60	55	45	57	64	*	*
22 Cambodia	48	40	50	53	57	*	50	*	*	*
23 Peru	99	88	95	101	95	*	*	*	*	*
all high-burden countries	9.3	13	15	20	23	31	35	35	38	39
Global	11	14	16	21	23	35	38	38	40	40

— not available; * no additional data beyond DOTS report

¹¹ WHO/IUATLD/KNCV. *Revised international definitions in tuberculosis control (2000)*. Unpublished document available from WHO Geneva.

Figure 11. Global case detection rate (grey bars) and DOTS detection rate (green bars), 1995–99**Figure 12.** Detection rates of smear-positive (green bars) and all TB cases (grey bars) by WHO Region, 1999. Abbreviations are as in Figure 6.

Treatment results, 1994–98 cohorts

The number of new sputum smear-positive cases notified under DOTS in 1998 was 769 932, including late reports (Table 12a). According to 1999 reports, approximately the same number of cases (725 275) were registered for treatment in 1998 (Annex 6 lists notified and registered cases for 1998 by country). The discrepancy is due mostly to inconsistencies in reports from Brazil, Pakistan and Uganda (registered many fewer than notified), and Afghanistan and South Africa (many more registered than notified). Of the registered cases, 95% were evaluated for treatment outcome (Tables 12a and 13). Seventy-three percent of the registered cases were cured and a further 8% completed treatment (no laboratory confirmation of cure) giving, for the first time,

Table 12a. Treatment outcomes for smear-positive cases: 23 high-burden countries: DOTS strategy, 1998 cohort*

Country (ranked by burden)	Notified	Registered*	Regst'd (%)	Treatment outcomes(%)*								%est* cases	
				Cured	Completed treatment*	Died	Failed	Defaulted	Transferred	Not eval'd	Treatment success* (%)	successfully treated under DOTS	
1 India	12 421	12 418	100	83	1.2	4.4	2.7	7.5	1.0	0.3	84	9.3	
2 China	191 290	190 016	99	97		1.2	0.8	0.6	0.3	0.5	97@	34	
3 Indonesia	32 280	40 166	124	49	8.5	1.6	0.9	1.8	0.5	38	58	8.7	
4 Nigeria	13 161	13 161	100	59	14	6.4	2.6	14	2.8	1.7	73	6.8	
5 Bangladesh	33 220	33 506	101	76	4.3	5.1	0.9	9.1	3.0	1.9	80	21	
6 Pakistan	4 145	1 918	46	53	13	4.5	0.9	25	3.2	0.0	66	5.6	
7 Philippines	10 292	8 976	87	78	6.6	2.9	2.6	6.9	3.2	0.0	84	14	
8 Ethiopia	18 864	14 836	79	54	20	6.3	1.0	13	4.3	1.2	74	11	
9 South Africa	16 246	34 432	212	68	6.6	5.6	1.7	6.8	12	0	74	33	
10 Russian Federation	683	745	109	61	6.4	7.9	8.3	6.7	3.6	5.7	68	0.6	
11 DR Congo	33 419	33 442	100	58	12	5.3	1.0	9.4	8.4	6	70	36	
12 Viet Nam	53 147	52 799	99	90	2.7	2.8	1.2	1.9	1.5	0.0	93@	75	
13 Kenya	24 029	21 885	91	63	14	5.3	0.4	11	6.7	0.0	77	33	
14 Brazil	2 221	82	3.7	78	13	2.4			6.1	0.0	91@	23	
15 UR Tanzania	23 726	23 726	100	70	5.9					24	76	40	
16 Thailand	7 962	7 962	100	61	6.2	7.6	1.5	9.5	2.4	11	68	14	
17 Mozambique	12 116												
18 Myanmar	10 089	10 313	102	74	8.5	4.7	1.0	10	1.9	0.0	82	25	
19 Uganda	18 222	13 236	73	31	31	8.1	0.4	19	4.7	5	62	27	
20 Afghanistan	1 833	2 913	159	27	6.8	1.7	0.8	5.8	1.4	57	33	3.0	
21 Zimbabwe	14 492	12 748	88	50	19	10	0.3	8.3	12	0	70	34	
22 Cambodia	13 865	13 290	96	92	3.0	2.3	0.4	2.2	0.5	0.0	95@	46	
23 Peru	27 707	26 137	159	92		2.2	1.4	3.2	0.7	0.0	92@	94	
all high-burden countries	575 430	568 707	99	78	5.5	3.2	1.0	4.6	2.7	4.9	84	16	
Global (DOTS)	769 932	725 275	94	73	7.6	3.8	1.2	6.0	3.2	4.9	81	16	

* Cohort: cases diagnosed during 1998 and treated/followed-up through 1999. See table 4 and accompanying text for definitions of treatment outcomes.
 @=treatment success > 85%.

an overall treatment success rate over 80% in DOTS areas. Eighty-five percent of evaluated cases, and 16% of all estimated smear-positive cases, were treated successfully under DOTS.

As usual, the discrepancy between cases notified and registered is bigger in non-DOTS areas (Table 12b). The most striking examples are Russia and the Philippines. The deviation for South Africa could be explained in terms of DOTS/non-DOTS misclassification (see above). In the non-DOTS areas that presented results, treatment success was low (37%), and the cure rate very low (15%). This poor performance is explained primarily by the low evaluation rate (50%), and

Table 12b. Treatment outcomes for smear-positive cases: 23 high-burden countries: non-DOTS strategy, 1998 cohort*

Country (ranked by burden)	Notified	Registered	Regst'd (%)	Treatment outcomes (%)*							Treatment success* (%)
				Cured	Completed treatment*	Died	Failed	Defaulted	Transferred	Not eval'd	
1 India	271 645	271 645	100	1.9	22	0.1	0.1	2	0.2	73	24
2 China	23 172	20 080	87	85		1.8	6.5	4.5	1.7	1.0	85@
3 Indonesia											
4 Nigeria											
5 Bangladesh	4 517	4 523	100	50	7.3	0.5	0.3	28	8.4	5.8	57
6 Pakistan	10 829	27 470	254	20		0.3		56	0.6	24	20
7 Philippines	61 371	11 707	19	38	23	1.3	0.8	3.4	1.9	32	60
8 Ethiopia											
9 South Africa	66 047	2 657	4	30	17	5.1	0.9	13	34	0.0	47
10 Russian Federation	41 536										
11 DR Congo											
12 Viet Nam	1 726	1 752	102	75	10	3.9	2.3	6.4	2.2	0.0	85@
13 Kenya											
14 Brazil	36 588	29 996	82	10	30	2.4	0.3	6.3	3.7	48	40
15 UR Tanzania		1 450		66	6	11	1.5	7.3	5.9	1.9	73
16 Thailand											
17 Mozambique											
18 Myanmar											
19 Uganda											
20 Afghanistan											
21 Zimbabwe											
22 Cambodia											
23 Peru											
all high-burden countries	517 431	371 280	72	11	20	0.5	0.5	6.9	1.0	60	31
Global (non-DOTS)	670 235	461 299	69	16	22	1.1	1.7	7.7	1.7	50	37

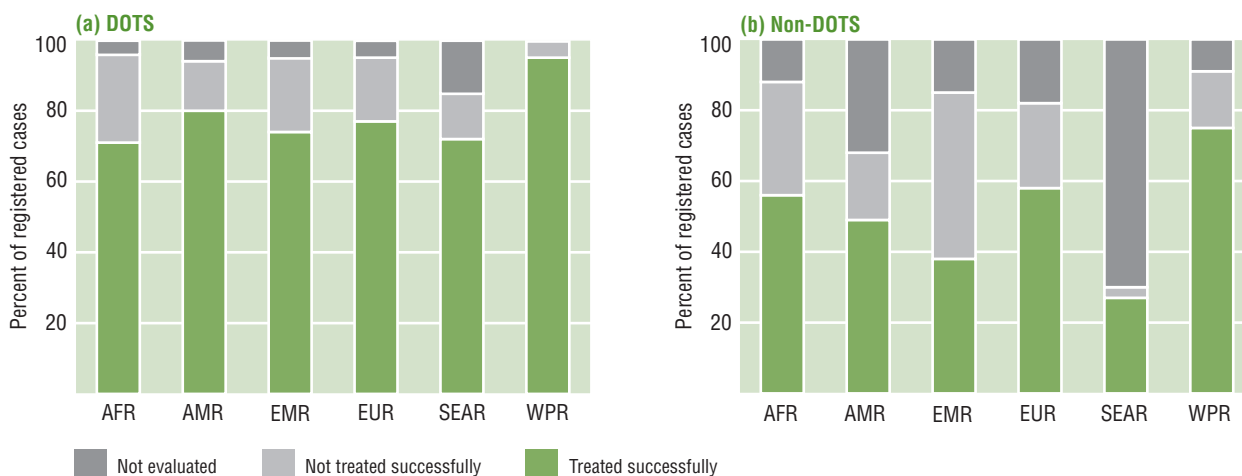
* see notes for table 12a

Table 13. Treatment outcomes for smear-positive cases, by WHO Region and strategy, 1998 cohort*

WHO region/strategy	Notified	Registered	Regst'd (%)	Treatment outcomes (%)*							Treatment success* (%)	% est* cases successfully treated under DOTS
				Cured	Completed treatment*	Died	Failed	Defaulted	Transferred	Not eval'd		
AFR DOTS	253 162	227 207	90	57	13	6.0	1.1	11	6.9	5.1	70	18
non-DOTS	86 181	8 401	10	48	8.1	5.2	2.6	10	14	13	56	
AMR DOTS	70 271	63 173	90	66	15	4.4	1.0	6.0	2.6	5.6	80	28
non-DOTS	65 007	46 979	72	25	24	3.3	0.5	11	4.2	33	49	
EMR DOTS	41 298	39 311	95	64	10	3.5	2.1	10	5.2	4.9	74	10
non-DOTS	33 584	44 009	131	32	5.6	1.1	2.0	41	2.6	15	38	
EUR DOTS	18 957	12 487	66	62	15	5.8	4.5	4.9	3.2	4.4	77	4.5
non-DOTS	92 414	34 730	38	12	46	2.7	12	6.0	4.0	17	58	
SEAR DOTS	103 498	114 355	110	66	6.0	3.9	1.2	6.4	1.7	15	72	6.1
non-DOTS	284 450	284 667	100	4.6	22	0.2	0.2	2.6	0.4	70	27	
WPR DOTS	282 746	268 742	95	94	1.1	1.6	0.9	1.2	0.7	0.4	95@	30
non-DOTS	108 599	42 513	39	58	17	3.0	4.9	5.1	2.6	9.4	75	
Global DOTS	769 932	722 275	94	73	7.6	3.8	1.2	6.0	3.2	4.5	81	16
non-DOTS	670 235	461 299	69	16	22	1.1	1.7	7.7	1.7	50	37	

* see notes for table 12a. Est: estimated cases (as opposed to notified or registered)

Figure 13. Treatment success in (a) DOTS and (b) non-DOTS areas, by WHO Region, 1998 cohort. Abbreviations are as in Figure 6.



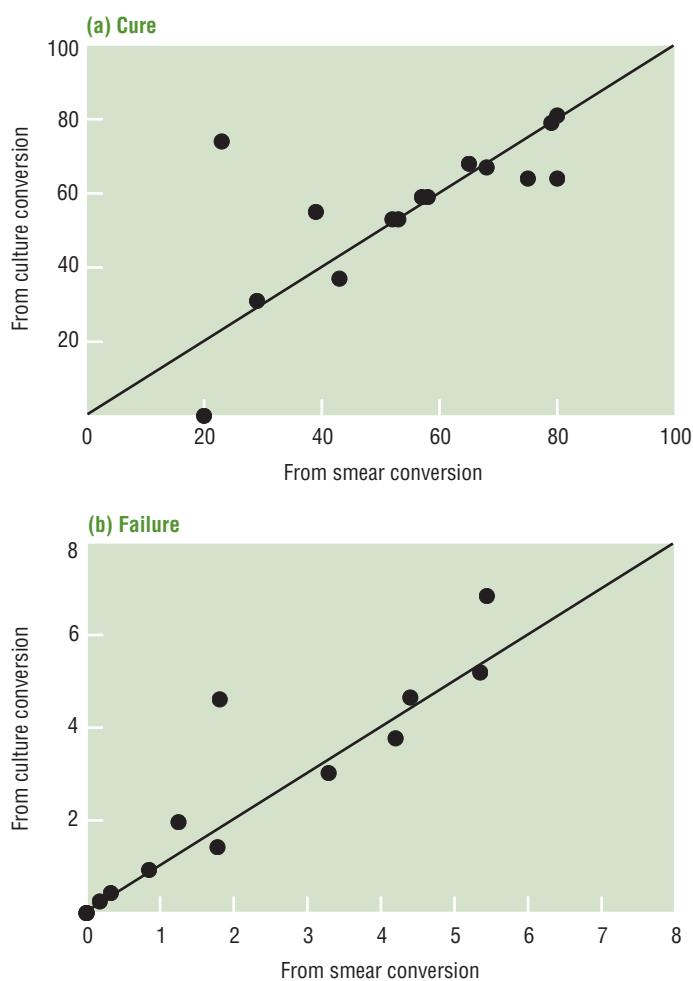
secondarily by treatment interruption (8%). Looking at evaluated patients only, 74% were successfully treated outside DOTS programmes.

By WHO region, the documented treatment success rates under DOTS varied from 70% in Africa to 95% in the Western Pacific Region (Figure 13, Table 13). Fatal outcomes were most common in Africa (6%) and Europe (6%), where cases are more frequent among HIV-infected individuals and the elderly, respectively. Treatment interruption (default) was most frequent in the African (11%) and Eastern Mediterranean Regions (10%).

Comparing treatment results for four consecutive cohorts (1995–98) shows that the overall success rates have remained approximately stable at 77–81% under DOTS, and 54–64% worldwide (Table 14).

In DOTS areas, 99 775 cases were registered for retreatment in 1998, more than twice as many as in the previous year. The reason for the difference is that China reported data for 1998, but not for 1997. The latest data show that 78% of patients on retreatment regimens were cured, and 6% completed. Chinese data strongly influence the high overall retreatment success rate of 84% (Table 15, Annex 2). Cohort data from Pakistan were incomplete, leaving in doubt the reported 92% cure rate.

Figure 14. Comparisons of (a) cure and (b) failure rates, judged by sputum smear versus culture conversion, in 16 European countries



Treatment outcomes measured by smear and culture conversion

Sixteen European countries provided treatment outcomes judged both by sputum smear and culture conversion. Although culture is generally a more sensitive method for detecting bacilli (so smears can be negative while cultures are positive), cure measured by smear conversion was not consistently higher than cure measured by culture conversion (Figure 14a). Nor was failure different by the two methods (Figure 14b).

Table 14. Treatment success for smear-positive cases: 23 high-burden countries, 1994–98 cohorts

Country (ranked by burden)	DOTS programmes					Whole country				
	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
1 India	83	79	79	82	84	83	25	21	18	27
2 China	94	96	96	96	97	91	93	94	95	95
3 Indonesia	94	91	81	54	58	94	*	*	*	*
4 Nigeria	65	49	32	73	73	*	*	*	*	*
5 Bangladesh	73	71	72	78	80	73	*	63	73	77
6 Pakistan	74	70	—	67	66	69	70	—	*	23
7 Philippines	80	—	82	83	84	88	60	35	78	71
8 Ethiopia	74	61	73	72	74	*	61	71	*	*
9 South Africa	—	—	69	73	74	78	58	61	68	72
10 Russian Federation	—	65	62	67	68	—	65	57	67	68
11 DR Congo	71	80	48	64	70	72	74	48	64	*
12 Viet Nam	91	91	90	85	93	*	89	89	85	92
13 Kenya	73	75	77	65	77	*	*	*	*	*
14 Brazil	—	—	—	—	91	70	17	20	27	40
15 UR Tanzania	80	73	76	77	76	*	73	*	*	*
16 Thailand	—	—	78	62	68	58	64	78	58	*
17 Mozambique	67	39	54	67	—	*	*	55	65	—
18 Myanmar	—	66	79	82	82	77	67	79	*	*
19 Uganda	—	—	33	40	62	—	44	*	*	*
20 Afghanistan	—	—	—	45	33	—	—	—	*	*
21 Zimbabwe	—	—	—	—	70	52	53	32	69	*
22 Cambodia	84	91	94	91	95	*	*	*	*	*
23 Peru	81	83	89	90	92	*	*	*	*	*
all high burden countries	86	83	79	82	84	83	54	51	57	63
Global	77	79	77	80	81	75	57	54	60	64

* see notes for table 12a. — not available; * no additional data beyond DOTS report

Table 15. Retreatment outcomes in DOTS programmes: 23 high-burden countries, 1998 cohort*

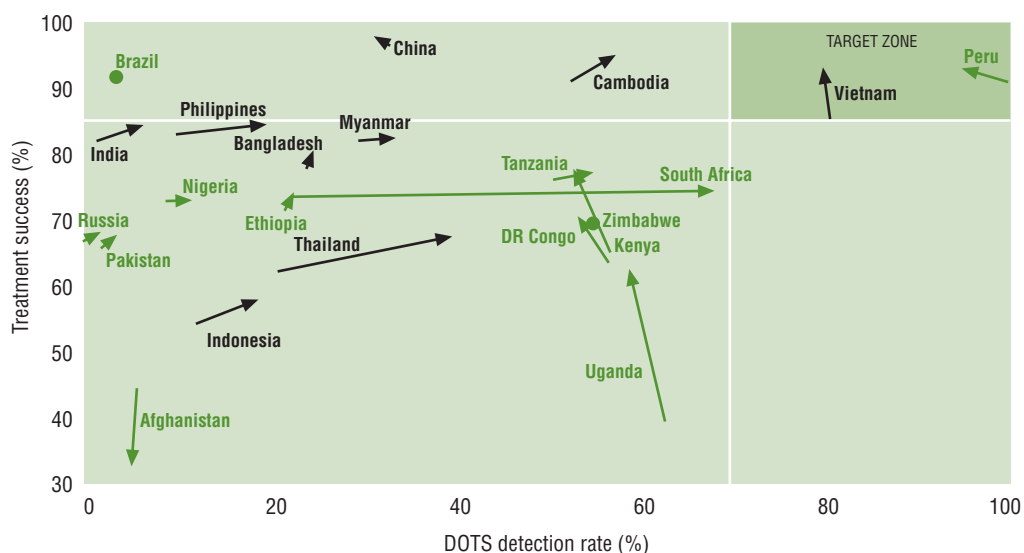
Country (ranked by burden)	Registered	Treatment outcomes (%)*							Treatment success (%)
		Cured	Completed treatment*	Died	Failed	Defaulted	Transferred	Not eval'd	
1 India	5 782	59	13	6.5	5.5	14	1.7	0.1	72
2 China	49 378	95	13	1.7	1.7	0.8	0.2	0.3	95@
3 Indonesia	893	53	20	2.6	1.7	6	1.1	16	73
4 Nigeria									
5 Bangladesh	1 333	71	4.0	3.2	2	8.8	4.5	7	74
6 Pakistan	24	92	8.3					0.0	92@
7 Philippines	29	76	6.9	3.5	3.5	10		0.0	83
8 Ethiopia	758	46	14	8.4	2.8	7.4	3.3	18	60
9 South Africa	4 718	57	13	12	2.6	10	4.8	0.0	71
10 Russian Federation	246	38	11	17	20	7.7	4.5	1.6	49
11 DR Congo	5 820	25	6.3	8.1	3.1	8.6	11	38	31
12 Viet Nam	5 612	79	4.7	4.9	6.9	2.1	2.1	0.0	84
13 Kenya	1 541	55	9.3	6.8	0.8	10	4.2	14	64
14 Brazil									
15 UR Tanzania	1 450	66	6.3	11	1.5	7.3	5.9	2.0	73
16 Thailand	556	49	6.3	6.7	4.9	9.7	3.6	20	55
17 Mozambique									
18 Myanmar	2 052	66	10	6.2	2.7	12	3.2	0.0	76
19 Uganda	1 573	31	29	12	0.9	20	6.2	0.0	60
20 Afghanistan	40	70	7.5	7.5	7.5	5	2.5	0.0	78
21 Zimbabwe									
22 Cambodia	691	89	2.8	3.9	1.2	3.5		0.0	91@
23 Peru	5 267	83		4.2	3.7	8.5	0.8	0.0	83
all high burden countries	87 763	80	3.8	4.0	2.6	4.4	1.9	3.6	83
Global	103 169	76	5.7	4.7	2.6	5.5	2.1	3.5	82

* see notes for table 12a

Progress in TB control in 23 high-burden countries

Figure 15, and Tables 11 and 14, give an overview of progress towards meeting WHO targets for the countries listed in TB80 (except Mozambique which did not provide 1999 data). The immediate impression conveyed by Figure 15 is that the arrows depicting progress from 1998 to 1999 are short, with the exceptions of South Africa, Thailand and the Philippines. A more considered account of developments in these countries is given in the paragraphs that follow. These notes, which include some preliminary data for the year 2000, should be read in conjunction with the country profiles in Annex 3, and with the plans for expanding TB control in these countries.¹²

Figure 15. DOTS progress in high-burden countries, 1998–99. Treatment success refers to cohorts of patients registered in 1997 or 1998, and evaluated, respectively, by the end of 1998 or 1999. DOTS detection rate is the fraction of estimated cases notified under DOTS in 1998–99. Arrows mark progress in countries that supplied notification and cohort data for at least two years. Circles (Brazil and Zimbabwe) represent countries which have treatment outcomes available for one year only. Countries should enter the graph at top left, and proceed rightwards to the target zone. Countries from AFR, AMR and EMR are shown in green, those from SEAR and WPR are shown in black.



1. India

India reported 41 000 additional smear-positive cases under DOTS in 1999, as compared with 1998, and an extra 66 000 smear-positive cases overall. In 1999 and 2000, population coverage increased rapidly so that by the end of the year 2000, more than 300 million people had access to DOTS. During 2000, more than 220 000 patients were treated under DOTS, including nearly 100 000 new smear positive cases, i.e. 12% of the estimated total for the country and approximately 60% of those in DOTS areas. India now has the second largest DOTS programme in the world (behind China) and is placing more than 25 000 patients on DOTS treatment every month. Coverage is expected to exceed 500 million people by the end of 2002. The programme has consistently reported treatment success around 80%. The success rate of 84% for the 1998 cohort is close to the WHO target, and would have been higher but for the 7% default rate. Although India has made much progress in the past 2–3 years, two thirds of the population still did not have access to DOTS as of late 2000.

2. China

The existing DOTS programme includes both the Infectious and Endemic Disease Control (IEDC) and Ministry of Health Projects, covering 50% and 14% of the population, respectively. More

¹² World Health Organization. *Progress Towards Global DOTS Coverage: Status of High-burden Countries*. Unpublished WHO document.

than 1 in 3 infectious TB cases are currently treated under DOTS and the reported treatment success rate has remained over 90% (though China does not separate patients known to be cured from those that merely completed treatment). The impact of this programme can be judged, in part, from the results of a national disease prevalence survey carried out during 2000. Preliminary analysis of the survey data suggests that the prevalence of smear-positive disease was 122/100 000 population, a decrease of 21% since 1990. More critically, prevalence was only 90/100 000 in the 13 provinces participating in the IEDC project. The reduction in these provinces between 1990 and 2000 was 37%, as compared with 3.2% elsewhere in China. The national death rate from TB was 9.8/100 000, a reduction of 53% since 1989. Applied to IEDC provinces, this result suggests that about 56 000 deaths were averted in the year 2000, towards the upper end of the range proposed on the basis of treatment-retreatment (capture-recapture) modelling.¹³ Set against this good news is the fact that DOTS coverage has not improved since 1997; consequently, the number of cases enrolled in 1999 was about the same as in 1998. The major challenge now is to secure political commitment and financial resources to maintain and expand the DOTS programme. In this regard, there are two significant developments. First, the State Council of China held a high-level advocacy meeting with national and provincial leaders in December 2000 to push for increased commitment from all levels of government. Second, a group of international partners, including the World Bank and the Department for International Development (UK), is working to provide new funds for TB control in China.

3. Indonesia

Political commitment for TB control is strong under GERDUNAS TB—a nationwide effort to mobilize a diversity of forces against tuberculosis. The country extended DOTS to an additional 50 districts during 1999 and reported that 90% of the population now live in areas where DOTS is implemented. However, the extra 17 000 smear-positive cases reported under DOTS in 1999 brings the case detection rate up to only 19%. Case detection needs to be increased by involving all health facilities in DOTS areas. Treatment success among evaluated cases in the 1998 cohort was 92%, but the absence of reported outcomes for 38% of registered smear-positive cases leaves the overall success at just 58%. Over 40 000 cases were registered for treatment under DOTS in 1998, whereas only 32 000 were notified that year. Major efforts are said to be under way to build capacity at various levels to improve the quality of TB control services. A wide range of improvements is evidently needed because the data submitted to WHO indicate low coverage, doubtful treatment outcomes and inconsistent reporting.

4. Nigeria

DOTS population coverage did not increase between 1998 and 1999, though case detection rose from 10% to 12%. A comparison of the last two cohorts shows that treatment success did not change between 1997 and 1998 (73%). Results in 1998 would have been better, but some states recorded high rates of death (probably due to HIV) and defaulting (others have maintained high cure rates above 80%). The low level of accessibility to effective TB care is expected to improve soon because more resources are available from internal and external sources to expand DOTS coverage from 20 to all 36 states, and to the federal capital. The results, in terms of improved rates of case detection and cure, are awaited.

5. Bangladesh

In 1999, DOTS expanded in Chittagong metropolitan area, and nationwide coverage reached 90%. NGOs are responsible for 40% of DOTS coverage, including both rural and urban areas, and government is responsible for the other 60%. The two parts of the DOTS programme together detected 25% of estimated smear-positive cases. The big difference between population coverage and case detection persists because many patients continue to seek treatment from

¹³ Dye C, Zhao F, Scheele S, Williams BG. Evaluating the impact of tuberculosis control: number of deaths prevented by short-course chemotherapy in China. *Int J Epidemiol* 2000; 29: 558–564.

non-DOTS facilities, including medical college hospitals and private practitioners. The treatment success rate of new smear-positive cases was 80% in the 1998 cohort, an increase on previous years. By contrast, treatment success outside DOTS areas was only 57%, with 28% of patients defaulting. Among cases seeking retreatment under DOTS, the percentage which were cured or completed treatment jumped from 58% in 1997 to 74% in 1998, mainly because a greater proportion of cases was evaluated. Since July 1998, the management of supplies, and recording, reporting and training have been unified following a reform of the health sector. This may have an impact on the future performance of the DOTS programme.

6. Pakistan

According to 1999 data, Pakistan still had only 8% DOTS coverage with no apparent expansion on the previous year. Case reports have fluctuated over the past three years, and so consequently has the case detection rate. Of the cases notified in 1998, only half were registered for treatment. Treatment success among cases registered has been more stable, and the 66% reported for the 1998 cohort is consistent with earlier years. The main reasons for this poor and erratic performance up to 1999 were weak leadership of the NTP, and a budget that was far too small. During 2000, Pakistan took decisive action, with the result that federal and provincial ministries now have substantially increased funds for TB control. With these extra funds they have been able to establish a team of TB experts which operates nationally and provincially, and to ensure a regular supply of anti-TB drugs. All provinces have now begun to implement DOTS and coverage was 14% at the end of 2000. Further expansion is expected to take place in 2001. Pakistan appears, finally, to have launched a credible, national TB control programme.

7. Philippines

DOTS has expanded rapidly in the Philippines, reaching 43% population coverage in 1999 compared with 17% in 1998. By the end of 1999, the WHO strategy was operational in 28 provinces. Twenty percent of all estimated smear-positive cases were notified to the DOTS programme in 1999, double the proportion in 1998. The extra 10 000 smear-positive cases reported under DOTS in 1999 were added at the expense of more than 8000 fewer cases reported from non-DOTS area. Thus, the net gain in smear-positive cases reported in 1999 was approximately 2000 cases. Treatment success in the 1998 cohort was close to the WHO target of 85%; defaulting (7%) was the main obstacle to better cure. Outside the DOTS cohort, treatment success was only 60% because a large fraction of cases was not evaluated. The burden of TB in the Philippines was accurately measured by a prevalence survey carried out in 1997; the high estimate of case detection overall (70%) is probably accurate and, with impressive outcomes of treatment, suggests that rapid progress could be made towards WHO targets.

8. Ethiopia

Only 45% of Ethiopians have access to (live within 10km of) general health services. Thus, it will be hard to provide DOTS to more than half the population if the service is confined to health facilities. Although we report here that DOTS coverage was 63% in 1999 (based on geographical Zones), a more precise analysis¹⁴ suggests that 825 out of 2563 (32%) health facilities were using DOTS towards the end of 2000. True access appears to be closer to 32% than to 63% because less than one quarter of estimated smear-positive cases were notified to DOTS programmes in 1999. Although a growing fraction of patients is diagnosed as smear-positive, the fraction in 1999 (30%) was still lower than expected (55–70%), even allowing for a higher proportion of HIV-infected, smear-negative cases. By contrast, the proportion of patients diagnosed with extrapulmonary TB (31%) was far higher than expected. The treatment success of new smear-positive cases was 74% in the 1998 cohort, kept low by the 13% default rate (one recent study found more than a quarter of “defaulters” to be unreported deaths). To expand DOTS in a country with such

¹⁴ Tuberculosis and Leprosy Control Programme Ethiopia. Concise Introduction and Performance in 1992 EC (July 1999–June 2000). Disease Prevention and Control Department, Ministry of Health, Ethiopia.

low access to general health services is a major challenge. Success will depend, among other things, on identifying ways to provide DOT outside health facilities, and on improving collaboration between organizations concerned with the control of TB and HIV/AIDS.

9. South Africa

DOTS coverage was extended to two thirds of the country by the end of 1999, and the proportion of smear-positive cases detected under DOTS reached 76%. The country reported 38 000 more smear-positive cases under DOTS in 1999 than in 1998, the second biggest increment after India. Although estimated incidence for 1999 (492/100 000) was higher than for 1997 (438/100 000), it may still be too low because the proportion of smear-positive cases detected nationally exceeded 100%. Treatment success has remained stable at 74%, mainly because 12% of cases were not evaluated. The number of cases registered for treatment under DOTS (reported to WHO in 1999) was twice as big as the number notified (reported in 1998), a conspicuous anomaly. The likely explanation is that half of these patients were diagnosed and began treatment in non-DOTS areas that were later re-classified as DOTS. Notwithstanding these uncertainties over case detection and treatment success, South Africa is in a position to meet WHO targets of 70% case detection and 85% treatment success within the next 1–2 years.

10. Russian Federation

By the end of 1999 DOTS coverage was still low at 5%, unchanged from 1998. Two territories implemented DOTS during 1998, Leningrad and Murmansk, but the enrolment of patients began in the third quarter of the year, so treatment results are not yet available. Approximately 2% of estimated smear-positive cases were reported from areas classified as DOTS in 1999. Outside DOTS areas, the number of smear-positive cases fell by 21 000 between 1998 and 1999, because no distinction was made in previous years between diagnoses made by culture and smear. Treatment success in the 1998 cohort was 68%, due to persistently high rates of death (8%) and defaulting (7%). During 1999 and 2000, projects began in Achangelsk, Orel, Novgorod, Karelia, Vladimir and Altaj. Negotiations with the World Bank on a loan to reinvigorate TB control nationally were advanced and the loan project should start in 2001. The loan is intended to provide a basic (DOTS-type) package of TB control measures to 55% of the civilian population and 45% of the prison population over the next 5 years. The project will address the problem of diagnosing and treating drug-resistant cases through pilot projects in selected civilian and prison populations. The Russian Ministry of Health is working closely with WHO on a revision and update of the Russian TB control strategy, to be completed by the beginning of 2002.

11. Democratic Republic of the Congo

DOTS coverage and the case detection rate have remained steady since our records began in 1995. As in 1998, coverage (62%) was reported to be about the same as the DOTS detection rate (53%). Population coverage is commonly much higher than the detection rate; little extra information was provided from DR Congo in 1999 to explain the similarity. The possibilities are that the incidence rate has been underestimated, that notification rate is exaggerated (e.g. because cases from non-DOTS areas are included), or that DOTS areas of the country suffer relatively high incidence rates. Treatment success climbed to 70%, but 9% of patients defaulted and 6% were not evaluated.

12. Viet Nam

Beginning in 1995 Viet Nam rapidly expanded the availability of DOTS, and has maintained coverage since 1996. Over 98% of the population had access to DOTS in 1999. Treatment success rates have consistently been over 85%, and reached 93% in the 1998 cohort. The estimated proportion of all incident smear-positive cases successfully treated was outstandingly high at 75%. Viet Nam has fallen two places in the league of high-burden countries, not because there is any evidence (yet) that incidence has declined, but rather because the numbers of cases have prob-

ably increased in Russia and DR Congo. In 1999, and in 1998, Vietnam was one of only two countries in TB80 to have met WHO targets of 70% case detection and 85% cure (Peru is the other).

13. Kenya

Kenya has reported 100% DOTS coverage since 1996. Although our best estimate of incidence suggests that the smear-positive detection rate is low (53%), we cannot rule out the possibility that the true incidence was lower than 157/100 000 in 1999. Treatment success has recovered to 77%, after last year's fall to 65% (due probably to aberrant reporting, rather than a lower cure rate). By solving the problem of defaulting (11%), Kenya should be able to reach 85% cure, despite high rates of HIV infection.

14. Brazil

In 1997, plans were made to start DOTS in four western states of Central West Brazil, and implementation began in 1998. In the same year the Brazilian National Health Board declared tuberculosis a priority problem. However, only 7% of the population had access to DOTS in 1999, and these areas detected 4% of smear-positive cases. Treatment success was 91% in the 1998 cohort, but only 82 patients were registered. This is far lower than the number originally notified because, during 1998, Brazil erroneously reported all patients from the Central West region as living in DOTS areas. At the national level, an improvement in the surveillance system is urgently needed so as to be able to record, for example, the number of health units using DOTS, and the number using smear microscopy for diagnosis. The most important administrative change during 1999 was the incorporation of the NTP into the Department of Basic Health Care (which includes the rapidly expanding Family Health and Community Health Workers Programmes). This is expected to facilitate access to TB diagnosis and supervised treatment. Brazil already notifies an estimated 79% of smear-positive cases in total, mostly under non-DOTS schemes. Having found the cases, there is great potential for the rapid provision of high-quality treatment and reporting under DOTS, and for meeting WHO targets by 2005 in accordance with national plans.

15. Tanzania

With regard to TB control, Tanzania closely resembles Kenya. DOTS is available country-wide, smear-positive case detection rate is stable at about 60%, and treatment success exceeds 70%. While progress in DOTS implementation remains static, the case notification rate continues to climb, though the growth rate has been slower in Tanzania (7%/year) than in Kenya (17%/year). This is consistent with the fact that HIV infection has spread more quickly in Kenya (prevalence HIV infection 14% in 15–49 year olds, 1999) than in Tanzania (prevalence 7%).

16. Thailand

Thailand continued its rapid expansion of the DOTS strategy to cover 59% of all districts by the end of 1999, up from 32% a year earlier. The 1998 cohort was the first in which treatment outcomes for a significant number of cases could be evaluated. While the success rate improved to 68% from only 62% in the previous year, these results still fall significantly short of WHO target levels. Missing outcome results for registered cases continued to be a problem, although the percentage of patients for which no results were available significantly decreased (11%, down from 19% in 1997). A higher death rate (8%) reflects the further expansion of the DOTS strategy to areas with a high HIV burden, where large numbers of fatalities among treated patients are observed. While treatment failures continue to occur only sporadically, the rise of treatment defaults to 10% is worrying. The NTP continues its intensive training and supervision efforts. Two areas getting special attention now are the quality of patient supervision, and of the reporting system. It is anticipated that outcomes will improve in existing DOTS areas after the initial phase of rapid programme expansion.

17. Mozambique

Mozambique has been added to the list of high-burden countries following revision of incidence estimates: 8% HIV prevalence among adults suggests an overall TB incidence of about 400/100 000 in 1999. In 1998, 41% of all estimated smear-positive cases were reported to WHO, DOTS coverage was estimated at 95%, and the treatment success under DOTS was 67% for the 1997 cohort. However, no further data were provided to WHO before 22 January 2001, so we can make no assessment of progress in TB control during 1999.

18. Myanmar

DOTS coverage in Myanmar increased from 64% in 1999 to 80% during 2000, and the emphasis given to training and supervision of staff has resulted in a programme of high quality. Case detection and treatment success rates show a steady increase to 33% and 82% respectively over data for 1998, with reports being received from all treatment units in the country. Of the 18% of patients not successfully treated, about half were defaulters. Continuity of funding, particularly for drugs, is vital to sustain and expand DOTS in this country.

19. Uganda

The combined TB and Leprosy programme (NTLP) achieved national coverage in 1995. Uganda officially reached 100% DOTS coverage in 1997, and has detected about 60% of estimated smear-positive cases annually since then. Treatment success for patients registered in 1998 was 62%; this significant improvement on previous years was made by increasing the proportion of cases evaluated from 65% to over 90%. However, there is a significant discrepancy between the number of cases notified in 1998 (18 222) and those registered for treatment in the 1998 cohort (13 236). This remains to be explained. Moreover, a 62% treatment success is still very low: the cohort data show that it could be increased by improving the evaluation rate still further, and by cutting the enormous default rate (19% in 1998). To these ends, the NTLP carried out, with WHO's assistance, a pilot study of community-based TB care in Kiboga district, starting in 1998. Rather than insisting that all patients be hospitalised for the intensive phase, patients were given the option of hospitalisation or ambulatory treatment (at a health centre or in the community under the observation of a volunteer). The cost per cure was reduced by 63%. Using village volunteers has improved access to treatment, lowered costs incurred by patients and providers, improved cure rates and lowered the frequency of treatment interruptions. As a result, community-based TB care has been adopted as policy by the Ministry of Health, and incorporated in the 2000–2006 Health Sector Strategic Plan.

20. Afghanistan

TB control activities have been seriously impeded by the breakdown of the government's administrative, technical and financial capacity, and by the security risk in some areas. The DOTS strategy was adopted in 1997 as national TB control policy in Afghanistan and, according to local sources, 30% of the population had access to DOTS services in 1999. WHO is assisting the MOPH with provision of DOTS to 14% of the population through 27 facilities in 6 regions. NGOs provide diagnostic and treatment services to the remainder of the population so far served. The National TB Institute provides, with the further help of NGOs, services to part of the population of Kabul only. In the absence of a coherent national TB programme, WHO supports the country by providing anti-TB drugs, training and guidelines, and assists with surveillance. During 1999, 5% of estimated smear-positive cases were reported to WHO-supported DOTS areas. The treatment success rate was only 33%, because 57% of registered cases were not evaluated. Anti-TB drugs are available in the private sector, even without prescription, threatening the development of drug resistance. At present there is no mechanism or forum for coordinating programme activities, or for planning at the national level. It is qualitatively clear that present control efforts are addressing just a small fraction of the country's TB burden, and this conclusion is reinforced by the few statistics that we have from Afghanistan.

21. Zimbabwe

Zimbabwe reported that DOTS was implemented in just 5 districts in 1998, and that plans existed to reach all districts by 2002. Implausibly, the reported DOTS coverage dropped to 12% in 1999 (from 100% in 1998) whilst 55% of all estimated smear-positives were notified under DOTS. As of 22 January 2001, no information had been provided to WHO to account for these inconsistencies. Treatment success was 70% in the 1998 cohort; this is low because of the high rates of death (10%, probably linked to HIV) and treatment interruption (8%). Zimbabwe's performance is thus mixed: capricious reporting to WHO casts doubt on the reportedly high rates of case detection under DOTS.

22. Cambodia

Reported DOTS population coverage rose from 88% in 1997 to 100% in 1998 and 1999. Fifty-seven percent of all smear-positive cases were notified under DOTS, a small increase on 1998. The measured treatment success was very high (95%). The prevalence of HIV infection is the highest in the Region (4% among 15–49 age group population, or 200 000 cases in 1999), and 20% of TB patients are expected to be HIV positive in year 2000. With some extra effort devoted to case finding (and perhaps to refining the present estimate of incidence), Cambodia should be able to reach the WHO target of 70% case detection by 2005.

23. Peru

In 1999, Peru occupied the last place in TB80. If calculated trends in incidence have been obeyed, it fell to 26th place during 2000, and has been eliminated from the league of high-burden countries. Ten years of intensive control effort have been accompanied by an estimated 50% reduction in incidence. A recent analysis found that at least 3.6% of the 7.5% annual decline in the incidence rate of pulmonary TB can be attributed to the improved programme of short-course chemotherapy launched in 1990.¹⁵ This elevated rate of decline implies that at least 16% of cases (78 000) and 70% of deaths (77 000) were averted between 1991 and 1999. As the case load falls, the distribution of TB is becoming more heterogeneous. Pockets of relatively high incidence requiring special attention exist in urban areas, especially Lima Callao. Going beyond DOTS, the NTP is now investigating, for example, the benefits of contact tracing, and of different approaches to the management of drug resistance, including studies of standardized and individualized regimens for MDR-TB.

Progress in TB control in all DOTS countries

116 DOTS countries provided data on treatment success and case detection (Figure 16); in 43 (37%), DOTS detection and treatment success rates exceeded 50% and 70%, respectively (Figure 17). These countries appear to have reached or are close to reaching WHO targets, but together accounted for only 12% of all estimated TB cases in 1999. Besides Viet Nam and Peru, the countries that appear to have met WHO targets are Cuba, the Maldives, Jamaica, Oman and Tunisia.

Of 82 countries that provided data from two consecutive cohorts, 52 (63%) showed higher treatment success rates during 1997–98; 32 (39%) improved DOTS detection by more than 1% while maintaining treatment success above 70%. Annex 7 tabulates case detection and treatment success rates by country for 1995 to 1998.

Several countries with high case detection and cure rates (that appear in Figure 17) have reported declining case notification rates in recent years. Examples of the annual rates of reduction (excluding industrialized countries) are: Cuba 8%, Lebanon 7%, the Maldives 13%, Nicaragua 4%, Oman 13%, and Uruguay 3%. Surprisingly, some other countries with high rates of case detection, including Morocco, have not reported significant reductions in incidence.

¹⁵ Suarez P, Watt CJ, Alarcon E, Portocarrero J, Zavala D, Canales R, Luelmo F, Espinal MA & Dye C. *The dynamics of tuberculosis in response to 10 years of intensive control effort in Peru*. Submitted for publication.

Figure 16. DOTS status in 1999. Estimated DOTS detection rate in 1999 and treatment success for the 1998 cohort in 116 countries reporting to WHO. The remaining DOTS countries have adopted the strategy too recently to provide data on treatment outcomes.

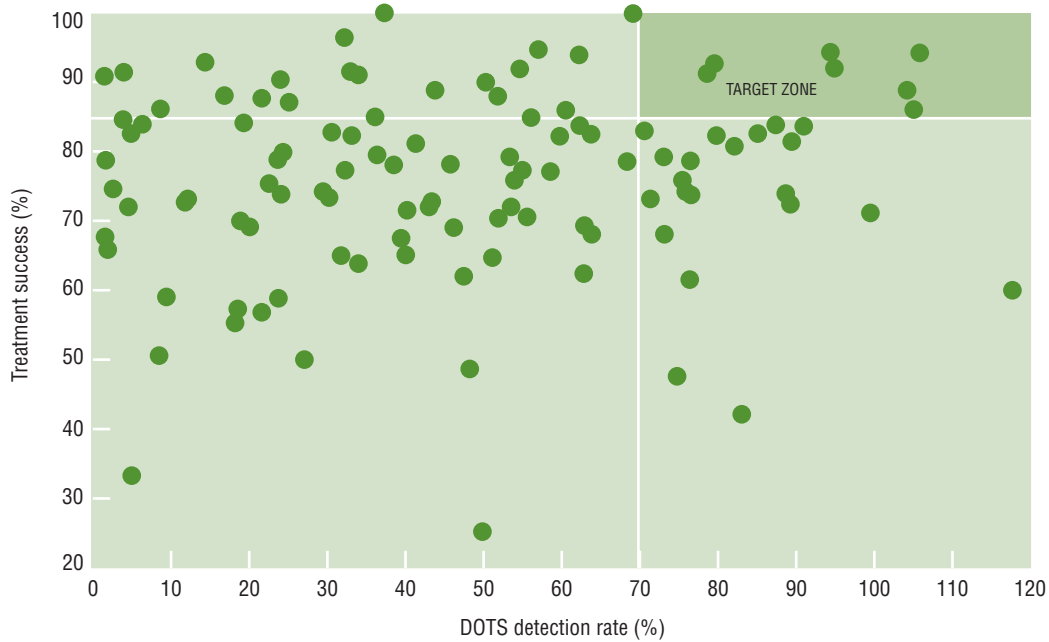
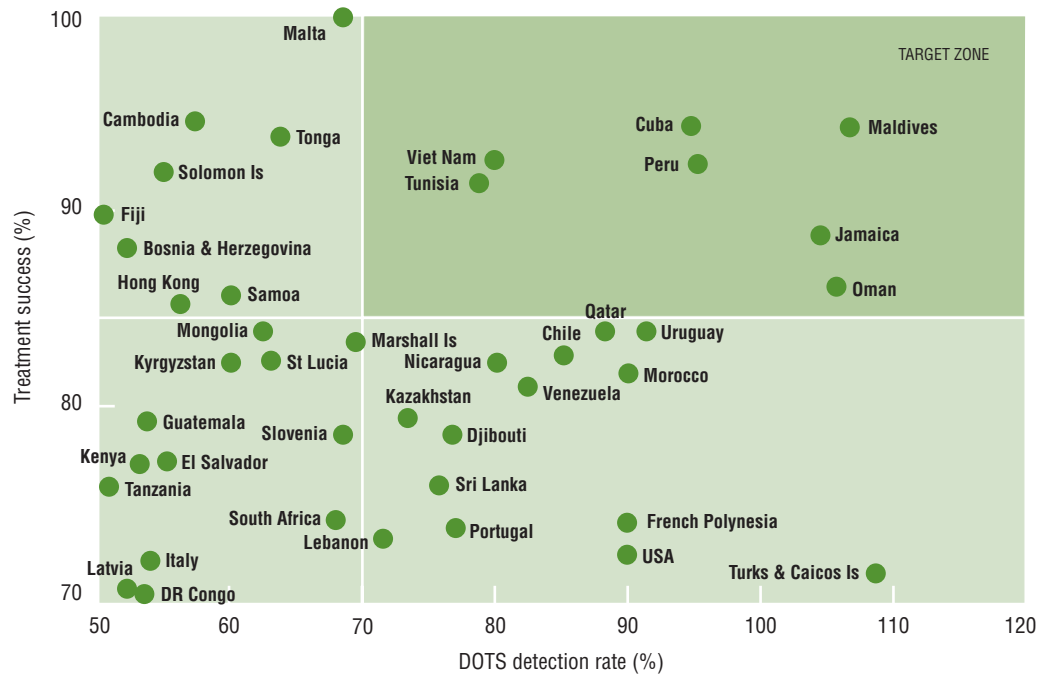


Figure 17. Magnified view of Figure 16, showing 43 countries that reported treatment success rates over 70% and estimated DOTS detection rates over 50%



Discussion

Estimated TB incidence, 1995–2005

There are at least three reasons to be cautious when using the incidence estimates and case detection rates presented in this report. First, it is crucial to remember that these estimates are subject to significant error. For high-burden countries, the difference between lower and upper estimates of incidence is typically twofold.¹⁶ Second, the league table (TB80) based on numbers of cases is just one among several that could be constructed. For example, a ranking of incidence rates per capita might be of greater value in highlighting the impact of HIV/AIDS on TB in Africa. Third, the incidence estimates for many countries have been revised according to trends in notifications, assuming that the case detection rate has not changed. That these countries have made no progress in proportion of all TB cases detected is a premise of the analysis, not a result.

Mindful of these caveats, we estimate that there were 8.42 million new cases in 1999, of which 3.67 million were smear-positive. This is a larger total than previously forecast by mathematical modelling.¹⁷ The revision made two important changes to TB80, the league of highest-burden countries: four African countries were ranked higher than before (Nigeria, Ethiopia, DR Congo and Kenya), and Mozambique joined TB80 ranked 17th (up 9 places). Peru fell to 23rd and last place in 1999, and was eliminated from TB80 in 2000.

From trends in notifications, we have re-estimated incidence rates from 1995–99, and projected forward to 2005. These calculations suggest that the annual rate of increase in TB incidence is 3% globally, 7% in Eastern Europe, and over 10% in the African countries that are most affected by HIV/AIDS. If these trends continue, Africa will have more cases (3.4 million) than any other WHO region by 2005. Only in industrialized countries is the number of cases expected to fall between now and 2005 (at 2–3%/year), though the rate per capita should fall slowly (< 2%/year) in the American, Eastern Mediterranean, South East Asia and Western Pacific Regions.

The projection for Africa, and probably for the world as a whole (10.2 million cases in 2005), should be viewed as the worst scenario. These forecasts assume that the present rate of increase will persist until 2005. There are two reasons to hope that this will not happen. First, HIV prevalence is falling in Uganda and, perhaps, no longer increasing exponentially in other countries such as Zambia and South Africa.^{18,19} Even without any control measures, the HIV epidemic is expected to peak and decline, though the size of the peak and the timing of the decline are still matters of conjecture. Second, we can expect improvements in TB control as a result of the wider implementation of DOTS.

Global and regional progress in TB control

Between 1998 and 1999, growth in the number countries using DOTS, and in DOTS population coverage was slow. More critical indicators of progress are the numbers of smear-positive cases enrolled in, and successfully treated by, DOTS programmes. This report shows, yet again, that DOTS programmes can achieve consistently high treatment success rates (77–81% in the five

¹⁶ WHO/IUATLD/KNCV. *Revised international definitions in tuberculosis control (2000)*. Unpublished document available from WHO Geneva.

¹⁷ Dye C, Garnett GP, Sleeman K, Williams BG. Prospects for worldwide tuberculosis control under the WHO DOTS strategy. *Lancet* 1998; 352: 1886–1891.

¹⁸ UNAIDS. *Report on the Global HIV/AIDS Epidemic*, June 2000. Geneva: UNAIDS.

¹⁹ Williams BG, Gouws E. *The epidemiology of HIV in South Africa*. Submitted for publication.

cohorts, 1994–98). Thus, the central challenge is to enrol a much larger proportion of TB patients in programmes that guarantee high-quality treatment.

The revised estimates of TB incidence 1995–99 can be used, together with case notifications under DOTS, to judge progress towards the global target of 70% case detection. During 1999, the rate of progress was about the same as in previous years: DOTS programmes continue to add approximately 120 000 new smear-positive cases each year, at which rate 70% case detection will be reached in 2013 (Figure 18). To reach the 70% target by 2005, DOTS programmes around the world must recruit at least 300 000 additional smear-positive cases each year. The number to be enrolled will obviously be greater if incidence (the denominator) continues to increase. Assuming present incidence estimates are roughly correct, new cases recruited under DOTS must include many that are not yet notified, because the overall case detection rate was only 40% in 1999.

WHO has advocated, as part of the DOTS strategy, sputum smear microscopy for diagnosis and for demonstrating cure. However many countries, notably in Europe, also use bacteriological culture. Against simple expectation, data from 14 European countries presented in this report did not show that cure rates measured by smear conversion were consistently higher than measured by culture conversion. The expected difference between the two methods might be masked if cases diagnosed as culture-positive but smear-negative have lighter bacterial loads and are easier to cure. Consistent with this is the observation that, in this set of data, the ratio % culture conversion / % smear conversion tends to be higher when the fraction smear-positive/culture-positive at diagnosis is lower. But this proposition needs to be explored further by examining the treatment outcomes for individual patients who were diagnosed as smear-positive or culture-positive.

Progress in TB control in 23 high-burden countries

Based on 1999 estimates of case detection, and treatment outcomes for the 1998 cohort, we have reclassified progress in the countries listed in TB80 (Table 16). All 23 countries have either improved (5) or maintained their positions (18). The top performing countries (treatment success $\geq 70\%$, DOTS detection rate $\geq 50\%$) included four from Africa, two from Asia, and one from Latin America.

Viet Nam and Peru are still the only high-burden countries to have exceeded WHO targets. Peru was on the point of relegation from TB80 in 1999 and, in our estimation, departed during 2000. This is reward, in part, for 10 years of intensive TB control, which has ensured consistently high rates of case detection and cure.

South Africa is one of four countries lying close to the target zone (Figure 15): significant progress was made in 1999, and the NTP as a whole (DOTS plus non-DOTS areas) apparently detected a high proportion of all new smear-posi-

Figure 18. Progress towards the 70% case detection target. Points mark the number of smear-positive cases notified under DOTS 1994–1999, expressed as a percentage of all estimated cases for each year. The solid line through these points indicates the current average annual increment of about 120 000 new cases, which intersects the target in year 2013; the steeper line represents a higher annual increment of approximately 300 000 cases, and reaches the 70% target by 2005.

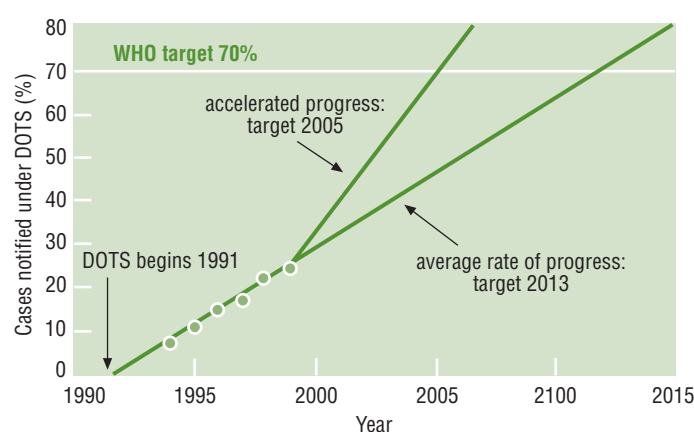


Table 16. Progress in DOTS implementation: 23 high-burden countries, 1998–99

Non-DOTS or incomplete data	DOTS			
	Low treatment success (< 70%)	Low case detection* (< 10%)	Intermediate case detection (10–49%)	High case detection ($\geq 50\%$)
Mozambique	Afghanistan	Brazil	Bangladesh	Cambodia
	Indonesia	India	China	DR Congo
	Pakistan		Ethiopia	Kenya
	Russian Federation		Myanmar	Peru
	Thailand		Nigeria	South Africa
	Uganda		Philippines	UR Tanzania
	Zimbabwe			Viet Nam

* DOTS detection rate: patients found and treated through DOTS programmes
Underline bold: countries which moved one or more categories up since 1998

tive cases. Cambodia, Kenya and Tanzania are near neighbours in Figure 15, but little progress was made in these countries during 1999.

Countries in the second group in Table 16 have high treatment success rates (> 70%) with intermediate rates of case detection (DDR 10–49%). The Philippines was the most progressive member of this group during 1999, doubling the number of smear-positive cases reported under DOTS. With a smear-positive case detection rate of 70% overall, and a treatment success under DOTS of 84%, the Philippines should be able to reach WHO targets well before 2005. Reports of a relatively large reduction in prevalence in the IEDC provinces of China, if confirmed, will surely provide a compelling argument for extending DOTS nationwide.

During 1999, India enrolled more than 40 000 additional smear-positive cases under DOTS, a bigger increment than any other country. The enormity of the TB control problem means that India remains in group three in Table 16, with high treatment success but low case detection nationally. During 2000, the DOTS detection rate in India is expected to climb above 10%. To reach 70% case detection, the programme will ultimately have to diagnose and report cases that are not yet notified: although India counted more smear-positives cases from both DOTS and non-DOTS areas during 1999, the combined total was still only 42% of all estimated cases.

India is accompanied in the third group by Brazil, which reported treatment outcomes for the first time. Although the number of cases detected and registered for treatment under DOTS accounts for a small fraction of all incident cases in Brazil, 79% of smear-positive cases were reported nationwide. For this reason Brazil, like the Philippines and South Africa, has the potential to advance rapidly towards WHO targets, and to provide the evidence from cohort data that it has done so.

According to the 1998 cohort data, seven of the high-burden countries had low treatment success rates (< 70%), and fall into the fourth group in Table 16. Thailand, Uganda and Zimbabwe cured 60–70% of patients. Russia has a comprehensive system of case finding, but diagnosis by smear-microscopy is not always accurate, and cure rates are routinely low. The fifth group in Table 16 is occupied by Mozambique, the only high-burden country not to have provided data for this report. Mozambique reported as a DOTS country with 95% coverage in 1998, and it remains unclear why no data were provided for 1999.

Following the success in Peru (diminished incidence), and now apparently in China (diminished prevalence), we should anticipate significant reductions (locally, at least) in TB burden in several other countries before 2005. A major challenge for TB control programmes now is to demonstrate, first, that incidence and prevalence are in decline and, second, that these declines can be attributed to specific control measures. The falling case notification rates in Cuba, Lebanon, the Maldives, Nicaragua, Oman and Uruguay probably do represent real reductions in TB incidence. Detailed epidemiological investigations in these countries may succeed in linking reduced incidence to the reportedly high case detection and cure rates. It will be equally important to explain why incidence is declining very slowly in countries like Morocco, which also find and cure a high proportion of patients. Whatever the results of such investigations, the fact that questions about TB in these countries emerge so clearly is testimony to the value of high-quality surveillance data.

ANNEX 1

Forms for data collection

Standard and European forms



WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998

1. Identification

Country:

Date of report:

National TB control programme manager (or person filling out this form):

A Name:

B Title:

C Address:

D Telephone:

E Fax:

F Email:

Remarks (any supplemental information you wish to provide about the data in the pages to follow):

This report should cover national data over a one year period: policy, practice and reporting for 1999, and treatment outcomes for cases registered in 1998. If any data you provide are based on less than one year, or less than national scope, please note this in "Remarks". Also, please note if you use a reporting calendar different from January 1 - December 31.



WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998

2. Policies/strategic components of TB control implemented in 1999 (check the appropriate box for each question)

- A** Sputum microscopy routinely used to diagnose suspected pulmonary cases?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- B** Standardized short-course chemotherapy (less than 9 months) used to treat all sputum smear positive cases?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- C** Direct observation of treatment used routinely -- at least during the initial phase (2-3 months) of treatment?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- D** Monitoring of treatment outcomes by cohort?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- E** A system of TB drug forecasting, financing and procurement?
- no
 yes
 don't know
 not applicable (decentralized)

STANDARDIZED SHORT COURSE CHEMOTHERAPY: standard regimens of 6-8 months, for at least all confirmed smear positive cases. (Consult WHO publications for more information).

TREATMENT DIRECTLY OBSERVED: a supervisor observes the patient swallowing the tablets. The supervisor may be a health worker or a trained and supervised community member. Observation includes at least the intensive phase for all new sputum positive cases.

COHORT ANALYSIS: analysis on a group of cases selected by time of registration (falling within a given time period of registration), not time of outcome.



WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998

3. Coverage of strategies and completeness of reporting in 1999 (all fields require absolute numbers except where indicated as %)

If you answered "yes, everywhere" or "yes" to all questions 2.A-2.E, you should complete only the 'WHO strategy' column on this page and the following pages. If you answered "no" to any questions 2.A-2.E, you probably should complete only the 'Other strategies' column. With any other combination of responses to questions 2.A-2.E, you would be expected to complete both 'WHO strategy' and 'Other strategies' columns.

'WHO STRATEGY' = the strategy for TB control recommended by WHO, comprising: 1) Government commitment to sustained TB control activities; 2) Case detection by sputum smear microscopy among symptomatic patients self-reporting to health services; 3) Standard short-course chemotherapy using regimens of six to eight months, for at least all confirmed smear positive cases, with directly observed therapy (DOT) for at least the initial two months; 4) A regular, uninterrupted supply of all essential anti-TB drugs; 5) A standardised recording and reporting system that allows assessment of treatment results for each patient and of the TB control programme performance overall.

	WHO strategy	Other Strategies
A How many administrative/operational units were there in 1999? Include in 'WHO strategy' new units following WHO strategy during at least one reporting period of 1999.	<input type="text"/>	<input type="text"/>
B What percentage of the country's population was living in geographic areas served by 'WHO strategy' units?	<input type="text"/> %	
C How many times were these administrative/operational units supposed to report to the next (supervisory) level in 1999?	<input type="text"/>	<input type="text"/>
D How many units did NOT report to the next (supervisory) level at all in 1999?	<input type="text"/>	<input type="text"/>
E What percentage of the country's population is covered by units that did NOT report at all in 1999?	<input type="text"/> %	<input type="text"/> %

ADMINISTRATIVE/OPERATIONAL UNIT = a treatment/diagnostic centre where a TB register is kept, or an administrative area in which the treatment of all TB patients is monitored by a designated health official.

TO REPORT = to send, on a regular basis, a standard form showing aggregated data on cases registered (even if zero), treatment outcomes, and other programmatic information. If you receive only individual case reports on an ad hoc basis, then the answer to question 3.C is "0", and questions 3.D-3.E do not apply.

WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998



4. Notifications for 1999 (absolute numbers)

	WHO strategy	Other strategies
New cases		
A - new pulmonary, smear-positive	<input type="text"/>	<input type="text"/>
B - new pulmonary, smear-negative	<input type="text"/>	<input type="text"/>
C - new pulmonary, smear not done / unknown	<input type="text"/>	<input type="text"/>
D - new extra-pulmonary	<input type="text"/>	<input type="text"/>
Relapses		
E - relapse pulmonary, smear-positive	<input type="text"/>	<input type="text"/>
Total notifications	<input type="text"/>	<input type="text"/>
Re-treatment not included in notifications to WHO		
F - pulmonary smear-positive re-treatment after failure	<input type="text"/>	<input type="text"/>
G - other re-treatment cases (not included in 4.E-4.F)	<input type="text"/>	<input type="text"/>

TOTAL NOTIFICATIONS: sum of 4.A-4.E. If you wish to include additional cases under notifications to WHO, you may note these in 'Remarks'.

CASE = active TB disease diagnosed by laboratory tests (two sputum smears or culture positive) or by a physician on the basis of laboratory, clinical-radiological and other evidence with decision to treat with anti-TB drugs.

NEW = a case in a patient who has never had treatment for TB, or has taken anti-tuberculous drugs for less than four weeks.

PULMONARY = TB involving lung tissue/parenchyma (ICD10 A15.0-A15.3, A16.0-A16.2, A19 [miliary]).

SMEAR POSITIVE = TB in a patient with (1) at least two initial sputum smear examinations (direct smear microscopy) positive for Acid-Fast Bacilli (AFB), or (2) one sputum examination positive for AFB and radiographic abnormalities consistent with active pulmonary tuberculosis as determined by the treating physician, or (3) one sputum smear positive for AFB and at least one sputum culture positive for M. tuberculosis.

SMEAR NEGATIVE = TB in a patient with symptoms suggestive of tuberculosis having all of the following: (1) Sputum specimens negative for AFB; (2) Radiographic abnormalities consistent with pulmonary tuberculosis and a lack of clinical response to one week of broad-spectrum antibiotic; (3) Decision by a physician to treat with a full curative course of anti-tuberculous chemotherapy. Additionally sputum culture (if available) may be positive for M. tuberculosis.

SMEAR NOT DONE = (same as in definition of smear negative, but with no sputum smear(s) obtained/examined.)

EXTRA-PULMONARY: TB involving organs other than the lungs. Diagnosis should be based on positive culture, or histological or strong clinical evidence consistent with active extra-pulmonary tuberculosis, plus a decision by a physician to treat with a full course of anti-tuberculous therapy. **NOTE:** Any patient diagnosed with both pulmonary and extra-pulmonary tuberculosis should be classified as pulmonary.

RELAPSE = TB in a patient who was previously declared cured of any form of TB by a physician, and has become smear- or culture-positive. ("Declared cured" equivalent to treatment success.) **SMEAR-POSITIVE RELAPSE =** relapse on the basis of a positive smear result specifically.

SMEAR-POSITIVE RE-TREATMENT AFTER FAILURE = TB in a patient who remained (or became) smear-positive by the time when his previous treatment regimen was terminated.

OTHER RE-TREATMENT = e.g., re-treatment after default, culture-positive smear-negative retreatment after failure.



WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998

5. Notifications for 1999, continued.

Age and sex of new pulmonary smear-positive cases (absolute numbers).

	0-14	15-24	25-34	35-44	45-54	55-64	65+
WHO strategy	Male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Female	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other Strategies	Male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Female	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

If these numbers are based on less than a year's worth of data, please note this in 'Remarks'.



WHO TB data collection form

for notifications in 1999, and treatment outcomes of cases registered in 1998

6. Treatment outcomes for NEW smear-positive cases registered in 1998 (absolute numbers)

	WHO strategy	Other strategies
A	Registered	<input type="text"/>
B	- Cured	<input type="text"/>
C	- Completed	<input type="text"/>
D	- Died	<input type="text"/>
E	- Failed	<input type="text"/>
F	- Defaulted	<input type="text"/>
G	- Transferred	<input type="text"/>

If these numbers are based on less than a year's worth of data, please note this in 'Remarks'.

REGISTERED (NEW) = The number of new smear-positive cases ultimately registered to receive treatment during the year, regardless of the regimen on which they were ultimately placed. This number should be very close to the number of new smear-positive cases notified the year before. Valid exclusions include only change in diagnosis (not TB disease) or change in classification (not smear positive). Do NOT exclude cases placed on long-course treatment regimens for whatever reason (even though some of these may not yet have a treatment outcome).

REGISTERED (RETREATMENT) = The number of ALL types of retreatment cases ultimately registered to receive re-treatment during the year.

7. RE-treatment outcomes for all cases re-registered in 1998

	Who strategy
A	Registered
B	- Cured
C	- Completed
D	- Died
E	- Failed
F	- Defaulted
G	- Transferred

CURED = smear negative at, or one month prior to, the completion of treatment and on at least one previous occasion.

COMPLETED = treatment completed but without proof of cure.

DIED = died of any cause during the course of treatment.

FAILED = smear positive at five months of later during treatment.

DEFAULTED = continuous treatment interruption of two months or more.

TRANSFERRED = transferred to another reporting unit AND treatment outcome unknown.



EuroTB



WHO/EuroTB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

1. Identification

Country:

Date of report:

National TB control programme manager (or person in charge of surveillance):

A Name:

B Title:

C Address:

D Telephone:

E Fax:

F Email:

Remarks (any supplemental information you wish to provide about the data in the pages to follow):

This report should cover national data over a one year period; policy, practice and reporting for 1999, and treatment outcomes for cases registered in 1998. If any data you provide are based on less than one year, or less than national scope, please note this in "Remarks". Also, please note if you use a reporting calendar that is different from the Gregorian calendar (January 1 - December 31).



EuroTB



WHO/EuroTB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

2.1. Policies/strategic components of TB control implemented in 1999 (check the appropriate box for each question)

- A** Sputum microscopy routinely used to diagnose suspected pulmonary cases?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- B** Culture examination routinely used to confirm the diagnosis of TB?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- C** Standardized short-course chemotherapy (less than 9 months) used to treat all sputum smear- and culture-positive cases?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- D** Direct observation of treatment used routinely -- at least during the initial phase (2-3 months) of treatment?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- E** Monitoring of treatment outcomes by cohort?
- no
 yes, everywhere
 yes, in SOME units/areas
 don't know
- F** A system of TB drug forecasting, financing and procurement?
- no
 yes
 don't know
 not applicable (decentralized)

STANDARDIZED SHORT COURSE CHEMOTHERAPY: standard regimens of 6-8 months, for at least all confirmed sputum smear- and culture-positive cases. (Consult WHO publications for more information).

TREATMENT DIRECTLY OBSERVED: a supervisor observes the patient swallowing the tablets. The supervisor may be a health worker or a trained and supervised community member. Observation includes at least the intensive phase for all new sputum positive cases.

COHORT ANALYSIS: analysis on a group of cases selected by time of registration (falling within a given time period of registration), not time of outcome.



EuroTB



WHO/EuroTB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

2.2. Definitions used in the reporting system in 1999 (check the appropriate box for each question)

- A** Which of the following are considered as definite TB cases?
- cases with positive culture for M. tuberculosis complex
 cases with a positive sputum for acid fast bacilli
- B** How do you define "geographic origin" in classifying TB cases?
- by birthplace (native- vs foreign-born)
 by citizenship/nationality (national vs foreign-born)
- C** How do you define "pulmonary" in classifying TB cases?
- lung parenchyma and tracheobronchial tree
 lung parenchyma and tracheobronchial tree PLUS pleura and intrathoracic lymph nodes
- D** Who is expected to report TB cases to the health authority in your country?
- physicians only
 laboratories only
 both physicians and laboratories
- E** Which population sub-groups are included in your TB reporting system?
- Foreigners:
- legal residents: no yes don't know
 - asylum seekers: no yes don't know
 - illegal immigrants: no yes don't know
- Prisoners: no yes don't know
- Military personnel: no yes don't know
- Homeless people: no yes don't know
- People with AIDS or HIV infection: no yes don't know
- Institutionalised people: no yes don't know
- F** Will you supply individualized data to EuroTB later this year?
- no yes don't know



EuroTB



WHO/EuroTB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

3. Coverage of strategies and completeness of reporting in 1999 (all fields require absolute numbers except where indicated as %)

If you answered "yes, everywhere" to questions 2.1A, 2.1C-E, and "yes" to question 2.1F, you should complete only the 'WHO Strategy' column on this page and the following pages.

If you answered "no" to any of these same questions, then you probably should complete only the 'Other Strategies' column.

With any other combination of responses to questions 2.1A, 2.1C-F, you would be expected to complete both 'WHO Strategy' and 'Other Strategies' columns.

'WHO STRATEGY' = the strategy for TB control recommended by WHO, comprising: 1) Government commitment to sustained TB control activities; 2) Case detection by sputum smear microscopy among symptomatic patients self-reporting to health services; 3) Standard short-course chemotherapy using regimens of six to eight months, for at least all confirmed sputum smear- and culture-positive cases, with directly observed therapy (DOT) for at least the initial two months; 4) A regular, uninterrupted supply of all essential anti-TB drugs; 5) A standardised recording and reporting system that allows assessment of treatment results for each patient and of the TB control programme performance overall.

	WHO Strategy	Other Strategies
A How many administrative/operational units were there in 1999? (Include in 'WHO Strategy' any new units following WHO strategy during at least one reporting period of 1999.)	<input type="text"/>	<input type="text"/>
B What percentage of the country's population was living in geographic areas served by 'WHO Strategy' units?	<input type="text"/> %	
C How many times were these administrative/operational units supposed to report to the next (supervisory) level in 1999?	<input type="text"/>	<input type="text"/>
D How many units did NOT report to the next (supervisory) level at all in 1999?	<input type="text"/>	<input type="text"/>
E What percentage of the country's population is covered by units that did NOT report at all in 1999?	<input type="text"/> %	<input type="text"/> %

ADMINISTRATIVE/OPERATIONAL UNIT = a treatment/diagnostic centre where a TB register is kept, or an administrative area in which the treatment of all TB patients is monitored by a designated health official.

TO REPORT = to send, on a regular basis, a standard form showing aggregated data on cases registered (even if zero), treatment outcomes, and other programmatic information. If you receive only individual case reports on an ad hoc basis, then the answer to question 3.C is "0", and questions 3.D-3.E do not apply.



Euro TB



WHO/Euro TB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

4.1 Total TB cases in 1999:

4.2. Total cases in 1999 by age, sex, and other characteristics:

A		0-4	5-14	15-24	25-34	35-44	45-54	55-64	>64	Unknown
ALL CASES	Male									
	Female									
B										
National	Male									
	Female									
Foreign	Male									
	Female									
Unknown Geo. origin										
C										
Culture +	Male									
	Female									

TOTAL CASES: cases for which a diagnosis of TB was made and treatment was started in 1999 (or would have been started, e.g., for cases diagnosed after death).



EuroTB

WHO/EuroTB data collection form

for tuberculosis notifications in 1999, and treatment outcomes of cases registered in 1998

5.1. Treatment outcomes for all new pulmonary SMEAR-POSITIVE cases registered in 1998 (absolute numbers)

	WHO Strategy new smear-positive	Other Strategies new smear-positive
A Registered	<input type="text"/>	<input type="text"/>
B - Cured (S-)	<input type="text"/>	<input type="text"/>
C - Completed	<input type="text"/>	<input type="text"/>
D - Died	<input type="text"/>	<input type="text"/>
E - Failed (S+)	<input type="text"/>	<input type="text"/>
F - Defaulted	<input type="text"/>	<input type="text"/>
G - Transferred	<input type="text"/>	<input type="text"/>

5.2. Treatment outcomes for all new pulmonary CULTURE-POSITIVE cases registered in 1998

	WHO Strategy new culture-positive	Other Strategies new culture-positive
A Registered	<input type="text"/>	<input type="text"/>
B - Cured (C-)	<input type="text"/>	<input type="text"/>
C - Completed	<input type="text"/>	<input type="text"/>
D - Died	<input type="text"/>	<input type="text"/>
E - Failed (C+)	<input type="text"/>	<input type="text"/>
F - Defaulted	<input type="text"/>	<input type="text"/>
G - Transferred	<input type="text"/>	<input type="text"/>

ANNEX 2

Global profile

Explanatory notes

GLOBAL PROFILE

The global profile consists of the following:

- Case finding (for the latest year)—an overview of notifications, estimated cases, and detection (notification/detection).
- Treatment outcomes (for the previous year's cohort)—both treatment and retreatment outcomes from DOTS programmes, and treatment outcomes (where available) from other (non-DOTS) programmes. See Table 4 for definitions of treatment outcomes.
- WHO TB control categories (current year)—The number of countries reporting to WHO by region, the number of countries in each WHO category (see Table 1), and the percentage of the regional population in each category.

Global profile: case notification and detection rates, 1999

Region*	Population			All cases			New smear-positive cases (ss+)				
	Number	%	a/sum(a)	Notified			Notified			Estimated	
				Number	rate	%	Number	rate	%	Number	% of est detected
	b	b/a	b/sum(b)	c	c/a	d	e	c/e			
DOTS	338 336 587	55	571 158	169	89	82	63				
non-DOTS	204 626 322	33	73 814	36	11	42 535	21	77			
No Report	73 478 207	12									
AFR	616 441 115	100	644 972	105	100	321 260	52	863 782	37		
DOTS	512 667 929	63	117 240	23	50	68 241	13	73			
non-DOTS	272 073 898	33	116 583	43	50	65 122	24	65			
No Report	32 626 249	4									
AMR	817 368 076	100	233 823	29	100	133 363	16	178 822	75		
DOTS	242 800 853	50	88 881	37	57	43 906	18	74			
non-DOTS	220 682 599	45	67 756	31	43	23 229	11	41			
No Report	22 859 662	5									
EMR	486 343 114	100	156 637	32	100	67 135	14	277 397	24		
DOTS	125 427 935	14	65 361	52	18	18 596	15	38			
non-DOTS	746 416 977	86	297 171	40	82	67 675	9	29			
No Report											
EUR	871 844 912	100	362 532	42	100	86 271	10	213 017	41		
DOTS	541 096 741	36	338 224	63	23	176 793	33	61			
non-DOTS	967 145 386	64	1 131 448	117	77	308 997	32	29			
No Report											
SEAR	1 508 242 126	100	1 469 672	97	100	485 790	32	1 348 194	36		
DOTS	948 989 927	57	498 222	53	61	282 113	30	62			
non-DOTS	719 202 389	43	323 955	45	39	109 851	15	38			
No Report	6 613 496	0.4									
WPR	1 674 805 812	100	822 177	49	100	391 964	23	842 956	47		
DOTS	2 709 319 972	45	1 679 086	62	46	868 374	32	62			
non-DOTS	3 130 147 571	52	2 010 727	64	54	617 409	20	35			
No Report	135 577 614	2									
Global	5 975 045 157	100	3 689 813	62	100	1 485 783	25	3 724 168	40		

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

Note: late updates from Europe added 20 DOTS and 1 151 non-DOTS notifications (all cases). These are included in the Regional profile for Europe, but not in the table above, nor in totals in the body of the report.

Global profile, cont'd: treatment success for the 1998 cohort

Region*	New smear-positive cases										Re-treatment cases									
	Registered	% cured	% compl- eted	% died	% failed	% default	% trans- ferred	% not eval	% success	Registered	% cured	% compl- eted	% died	% failed	% default	% trans- ferred	% not eval	% success		
AFR	227 207	57	13	6.0	1.1	11	6.9	5.1	70	18 508	42	12	9.8	2.4	12	6.8	15	54		
non-DOTS	8 401	48	8.1	5.2	2.6	9.9	14	13	56											
AMR	63 173	65	15	4.4	1.0	6.0	2.6	5.6	80	6 302	79	3	4.6	3.5	8.9	1.6	0.3	81		
non-DOTS	46 979	25	24	3.3	0.5	11	4.2	33	49											
EMR	39 311	64	10	3.5	2.1	10	5.2	4.9	74	1 577	47	15	9.4	6.1	17	4.6	0.6	62		
non-DOTS	44 009	32	5.6	1.1	2.0	41	2.6	15	38											
EUR	12 487	62	15	5.8	4.5	4.9	3.2	4.4	77	6 940	57	19	8.5	2.7	5.6	2.1	4.2	77		
non-DOTS	34 730	12	46	2.7	12	6.0	4.0	17	58											
SEAR	114 355	66	6.0	3.9	1.2	6.4	1.7	15	72	12 261	61	11	5.8	4.2	12	2.2	2.9	72		
non-DOTS	284 667	4.6	22	0.2	0.2	2.6	0.4	70	27											
WPR	268 742	94	1.1	1.6	0.9	1.2	0.7	0.4	95	56 131	93	0.6	2.1	2.2	1.0	0.4	0.3	94		
non-DOTS	42 513	58	17	3.0	4.9	5.1	2.6	9.4	75											
Global	725 275	73	7.6	3.8	1.2	6.0	3.2	4.9	81	101 719	76	5.7	4.6	2.7	5.4	2.1	3.5	82		
non-DOTS	461 299	16	22	1.1	1.7	7.7	1.7	50	37											

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

Global profile, cont'd: WHO TB control categories, 1999

Region*	Number		Number of countries in each category							% regional population in each category**				
	Countries	Reports	0	1	2	3	4	5	0	1	2	3	4	5
AFR	47	31	16	5	0	12	14	0	12	6.3	0.0	57	25	0.0
AMR	44	33	11	3	1	11	16	2	4.0	0.7	21	29	46	0.0
EMR	23	19	4	0	1	7	11	0	4.7	0.0	31	38	26	0.0
EUR	51	51	0	22	5	4	17	3	0.0	51	23	12	11	1.9
SEAR	10	10	0	0	1	6	3	0	0.0	0.0	1.6	97	1.4	0.0
WPR	36	27	9	8	1	7	10	1	0.4	12	0.3	82	5.6	0.2
Global	211	171	40	38	9	47	71	6	2.3	12	9.2	62	14	0.3

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

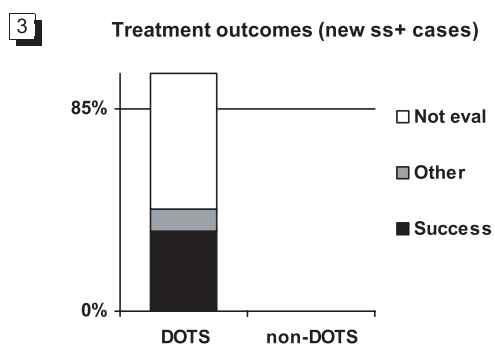
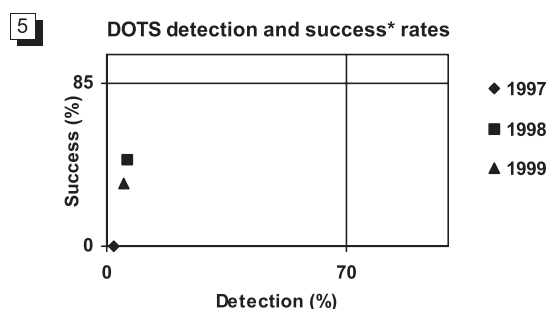
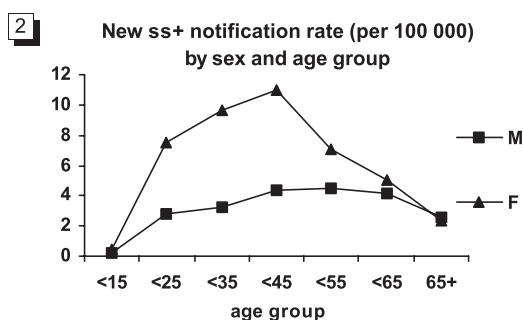
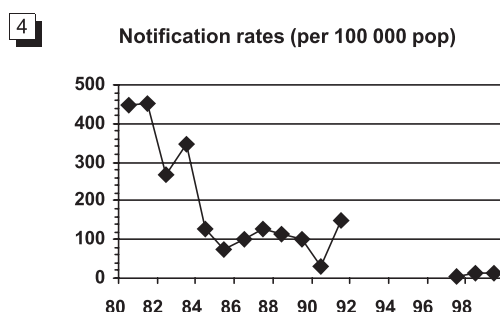
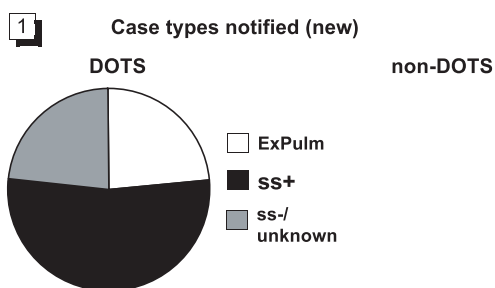
** Percent of regional population in each category: each country is assigned to only one of the above categories. This is in contrast to the case notification and detection rates table (page 54), where the population of any country can be divided into DOTS and non-DOTS areas.

ANNEX 3

Profiles of high-burden countries

Afghanistan

Latest Information:	1999	Trends:	1997	1998	1999
Population	21 923 463	DOTS population coverage (%)	12	11	14
Est. incidence (all cases/100 000 pop)	325	Notification rate (all cases/100 000 pop)	6.2	14	15
Global rank (by est. no. new cases)	20	Detection (new ss+ cases, %)	2.0	5.8	5.2
Regional rank	2	- DOTS detection (new ss+, %)	2.0	5.8	5.2
TB cases that are HIV+ (%)	0.1	Treatment success (new ss+ cases, %)*		45	33
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*		45	33
DOTS status (year adopted)	DOTS (1997)	Est. new ss+ treated successfully (%)*		3	3
		Retreatment success (all cases DOTS %)*			78



Number registered: 2913 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand.

The % of DOTS new cases that are ss+ (53%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (70%) is within expected range.

The maximum ss+ notification rates are for 35-44 year-olds (females) and 45-54 year-olds (males). The maximum M:F rate ratio is 0.3 :1 among 25-34 year-olds (Fig 2).

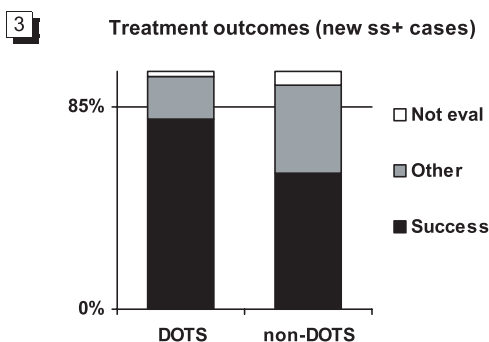
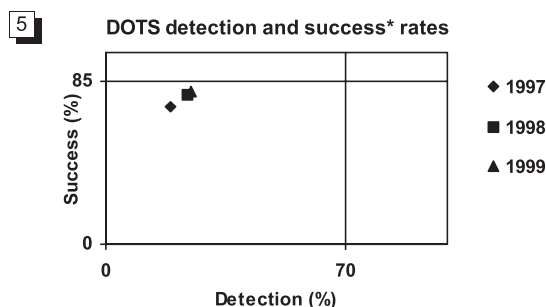
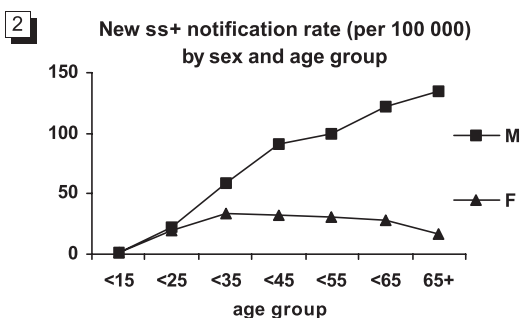
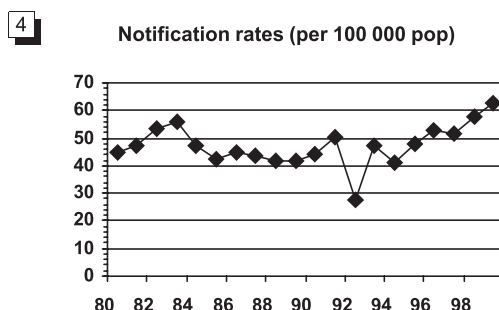
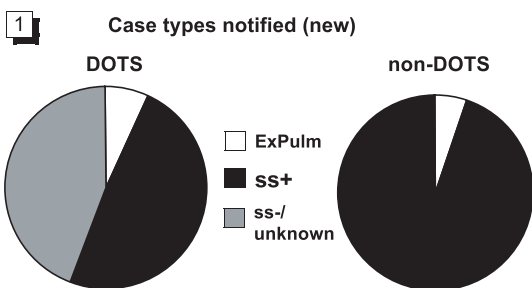
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Bangladesh

Latest Information:	1999	Trends:	1997	1998	1999
Population	126 947 104	DOTS population coverage (%)	80	90	90
Est. incidence (all cases/100 000 pop)	241	Notification rate (all cases/100 000 pop)	52	58	63
Global rank (by est. no. new cases)	5	Detection (new ss+ cases, %)	24	28	28
Regional rank	3	- DOTS detection (new ss+, %)	19	24	25
TB cases that are HIV+ (%)	0.1	Treatment success (new ss+ cases, %)*	63	73	77
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	72	78	80
DOTS status (year adopted)	DOTS (1993)	Est. new ss+ treated successfully (%)*	14	18	21
		Retreatment success (all cases DOTS %)*	57	58	74



Number registered: 33506 DOTS, 4523 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (49%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (52%) is lower than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 65+ year-olds (males). The maximum M:F rate ratio is 8.3 :1 among 65+ year-olds (Fig 2).

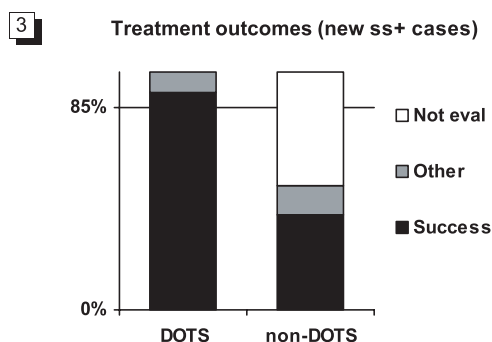
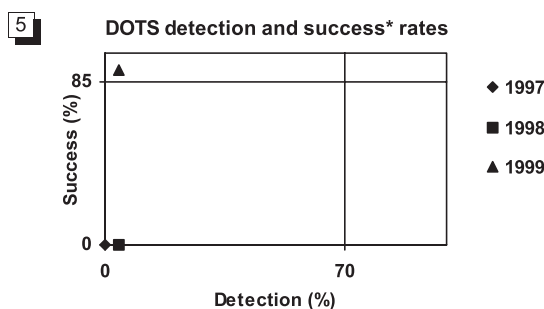
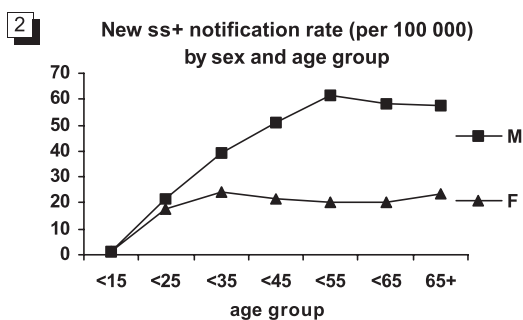
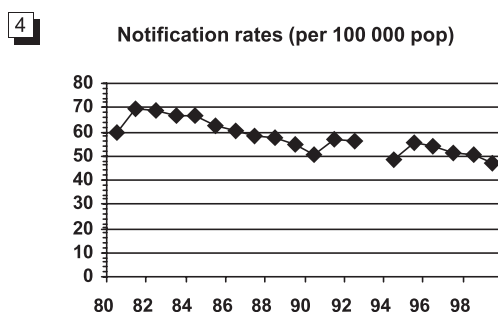
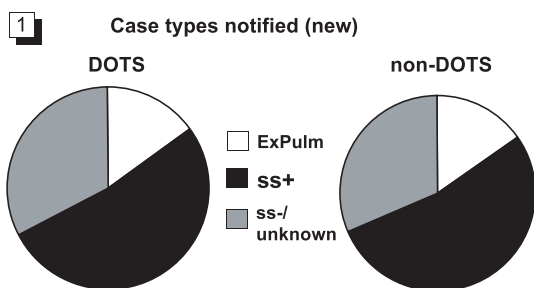
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Brazil

Latest Information:	1999	Trends:	1997	1998	1999
Population	167 987 960	DOTS population coverage (%)	0	3	7
Est. incidence (all cases/100 000 pop)	70	Notification rate (all cases/100 000 pop)	51	51	47
Global rank (by est. no. new cases)	14	Detection (new ss+ cases, %)	80	72	79
Regional rank	1	- DOTS detection (new ss+, %)		4.1	4.0
TB cases that are HIV+ (%)	3.3	Treatment success (new ss+ cases, %)*	20	27	40
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*			91
DOTS status (year adopted)	DOTS (1998)	Est. new ss+ treated successfully (%)*	17	22	23
		Retreatment success (all cases DOTS %)*			



Number registered: 82 DOTS, 29996 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation, however, is limited.

The % of DOTS new cases that are ss+ (52%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (61%) is within expected range.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 45-54 year-olds (males). The maximum M:F rate ratio is 3.0 :1 among 45-54 year-olds (Fig 2).

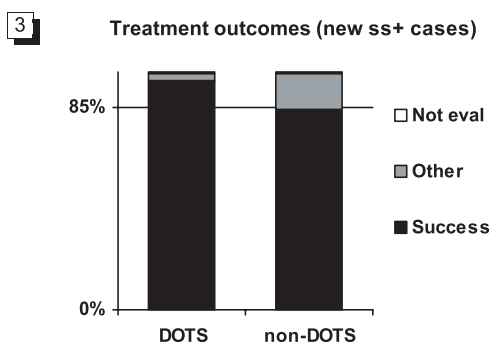
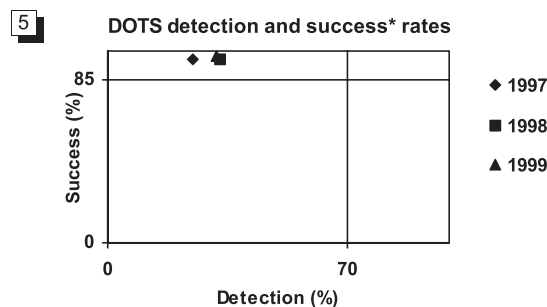
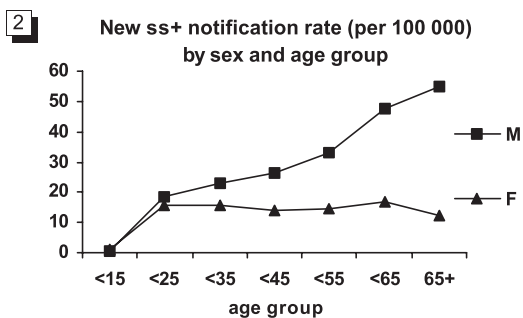
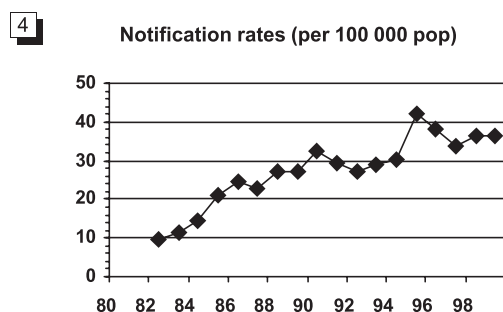
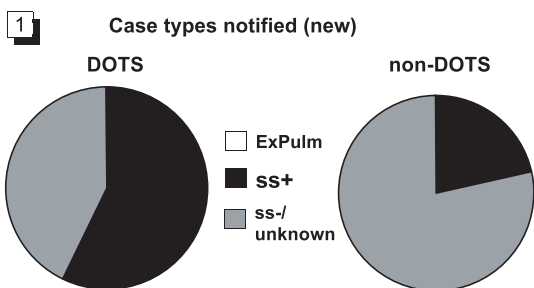
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has been reached! (Fig 5)

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

China

Latest Information:	1999	Trends:	1997	1998	1999
Population	1 266 838 226	DOTS population coverage (%)	64	64	64
Est. incidence (all cases/100 000 pop)	103	Notification rate (all cases/100 000 pop)	34	36	36
Global rank (by est. no. new cases)	2	Detection (new ss+ cases, %)	32	37	36
Regional rank	1	- DOTS detection (new ss+, %)	25	33	32
TB cases that are HIV+ (%)	0.4	Treatment success (new ss+ cases, %)*	94	95	95
Multi-drug resistance (new cases, %)	1.4-10.8 (5 provinces)	- DOTS treatment success (new ss+, %)*	96	96	97
DOTS status (year adopted)	DOTS (1991)	Est. new ss+ treated successfully (%)*	28	31	34
		Retreatment success (all cases DOTS %)*	94		95



Number registered: 190016 DOTS, 20080 non-DOTS

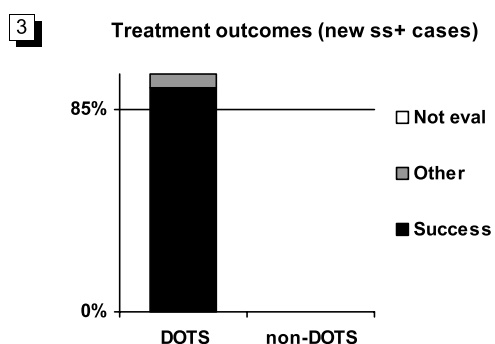
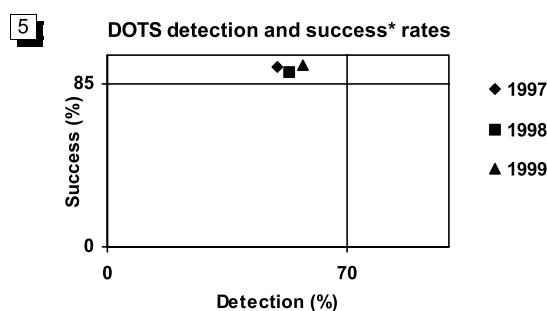
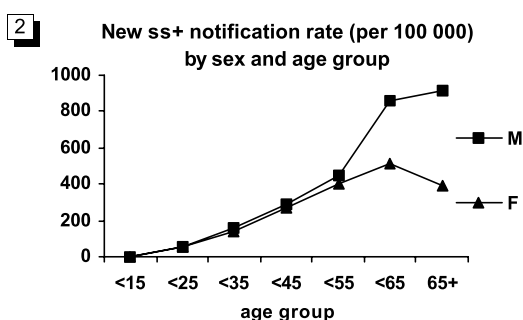
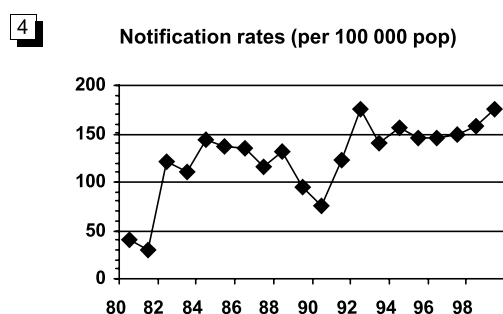
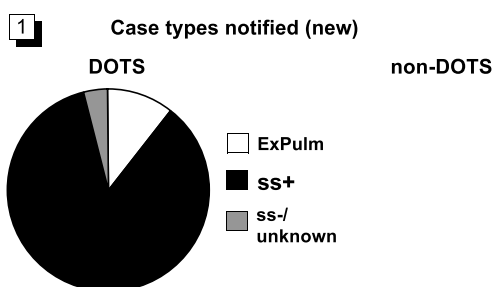
Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand. The % of DOTS new cases that are ss+ (57%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (57%) is within expected range. The maximum ss+ notification rates are for 55-64 year-olds (females) and 65+ year-olds (males). The maximum M:F rate ratio is 4.4 :1 among 65+ year-olds (Fig 2). The treatment success target (85%) has been reached! (Fig 3, 5) The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Cambodia

Latest Information:	1999	Trends:	1997	1998	1999
Population	10 945 289	DOTS population coverage (%)	88	100	100
Est. incidence (all cases/100 000 pop)	560	Notification rate (all cases/100 000 pop)	149	158	176
Global rank (by est. no. new cases)	22	Detection (new ss+ cases, %)	50	53	57
Regional rank	4	- DOTS detection (new ss+, %)	50	53	57
TB cases that are HIV+ (%)	20	Treatment success (new ss+ cases, %)*	94	91	95
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	94	91	95
DOTS status (year adopted)	DOTS (1994)	Est. new ss+ treated successfully (%)*	34	42	46
		Retreatment success (all cases DOTS %)*	89	90	91



Number registered: 13290 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (85%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (96%) is higher than expected.

The maximum ss+ notification rates are for 55-64 year-olds (females) and 65+ year-olds (males). The maximum M:F rate ratio is 2.4 :1 among 65+ year-olds (Fig 2).

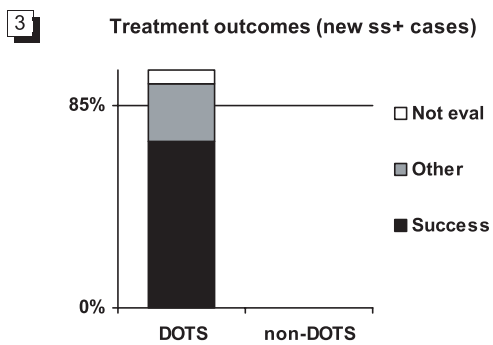
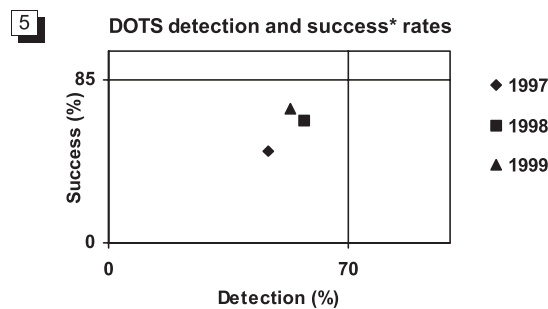
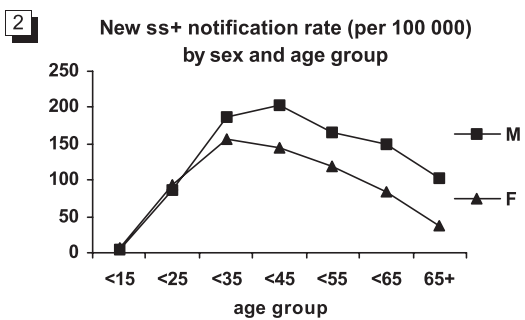
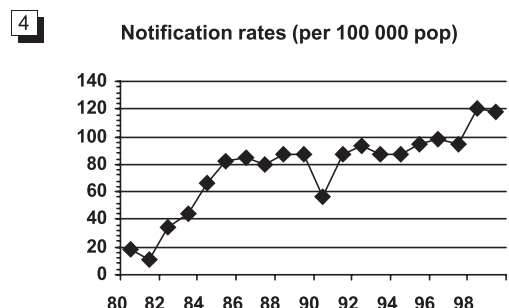
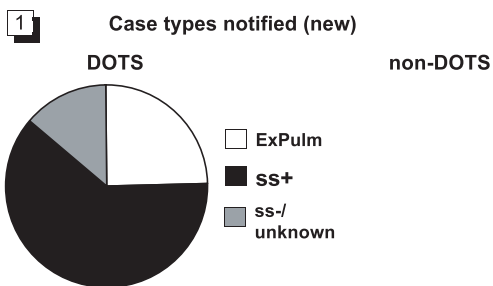
The treatment success target (85%) has been reached! (Fig 3, 5)

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Democratic Republic of the Congo (the)

Latest Information:	1999	Trends:	1997	1998	1999
Population	50 335 347	DOTS population coverage (%)	60	60	62
Est. incidence (all cases/100 000 pop)	301	Notification rate (all cases/100 000 pop)	95	120	118
Global rank (by est. no. new cases)	11	Detection (new ss+ cases, %)	47	57	53
Regional rank	4	- DOTS detection (new ss+, %)	47	57	53
TB cases that are HIV+ (%)	24	Treatment success (new ss+ cases, %)*	48	64	70
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	48	64	70
DOTS status (year adopted)	DOTS (1995)	Est. new ss+ treated successfully (%)*	22	28	36
		Retreatment success (all cases DOTS %)*	33	46	31



Number registered: 33442 DOTS, 0 non-DOTS

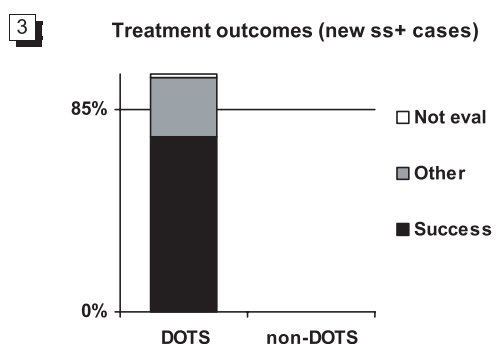
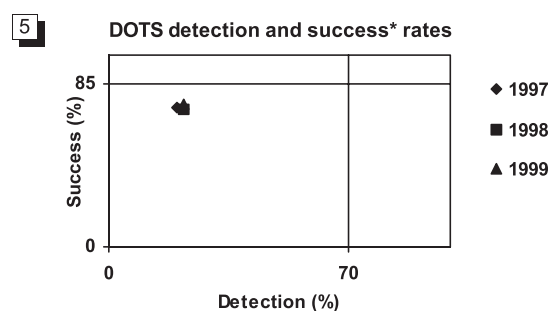
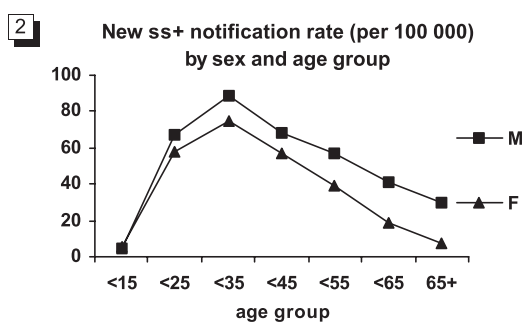
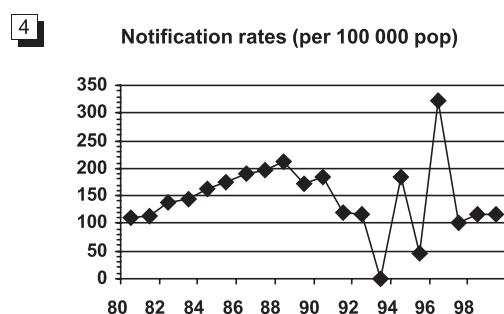
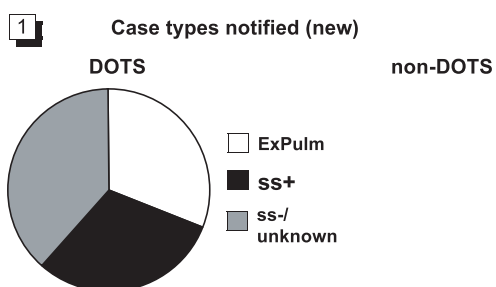
Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand. The % of DOTS new cases that are ss+ (61%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (81%) is higher than expected. The maximum ss+ notification rates are for 25-34 year-olds (females) and 35-44 year-olds (males). The maximum M:F rate ratio is 2.8 :1 among 65+ year-olds (Fig 2). The treatment success target (85%) has not yet been reached (Fig 3, 5). The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Ethiopia

Latest Information:	1999	Trends:	1997	1998	1999
Population	61 094 519	DOTS population coverage (%)	48	64	63
Est. incidence (all cases/100 000 pop)	373	Notification rate (all cases/100 000 pop)	102	117	118
Global rank (by est. no. new cases)	8	Detection (new ss+ cases, %)	20	22	22
Regional rank	2	- DOTS detection (new ss+, %)	20	22	22
TB cases that are HIV+ (%)	42	Treatment success (new ss+ cases, %)*	71	72	74
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	73	72	74
DOTS status (year adopted)	DOTS (1992)	Est. new ss+ treated successfully (%)*	10	10	11
		Retreatment success (all cases DOTS %)*	71	69	60



Number registered: 14836 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand.

The % of DOTS new cases that are ss+ (30%) is lower than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (44%) is lower than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 25-34 year-olds (males). The maximum M:F rate ratio is 4.2 :1 among 65+ year-olds (Fig 2).

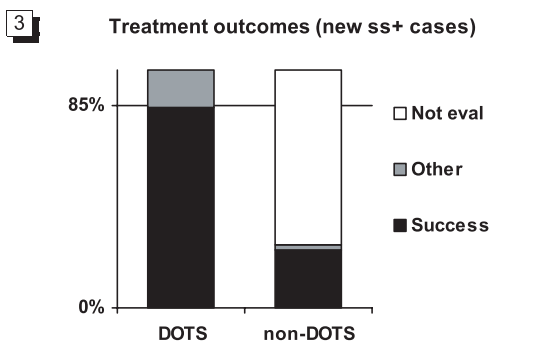
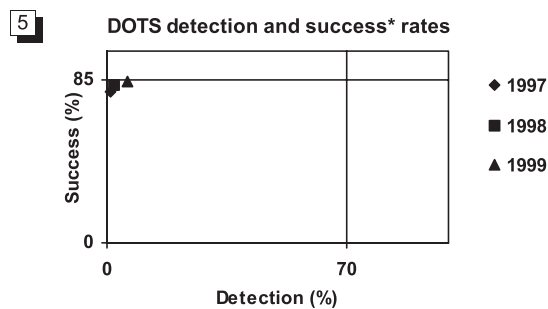
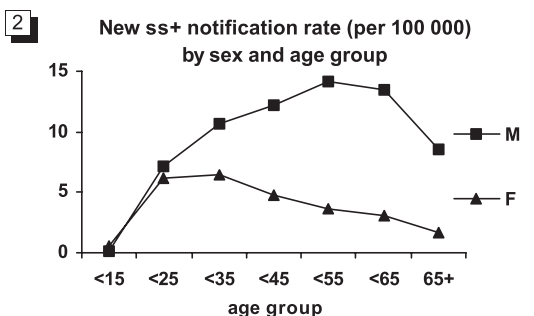
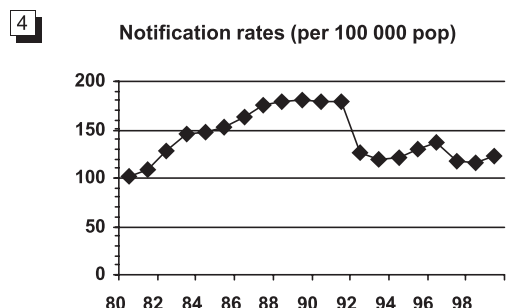
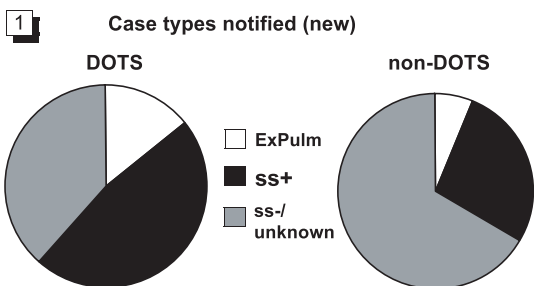
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

India

Latest Information:	1999	Trends:	1997	1998	1999
Population	998 055 828	DOTS population coverage (%)	2	9	14
Est. incidence (all cases/100 000 pop)	185	Notification rate (all cases/100 000 pop)	118	115	123
Global rank (by est. no. new cases)	1	Detection (new ss+ cases, %)	34	35	42
Regional rank	1	- DOTS detection (new ss+, %)	1.0	1.5	6.4
TB cases that are HIV+ (%)	4.0	Treatment success (new ss+ cases, %)*	21	18	27
Multi-drug resistance (new cases, %) 3.4 (Tamil Nadu State)		- DOTS treatment success (new ss+, %)*	79	82	84
DOTS status (year adopted)	DOTS (1993)	Est. new ss+ treated successfully (%)*	8	7	9
		Retreatment success (all cases DOTS %)*	67	65	72



Number registered: 12418 DOTS, 271645 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is expanding rapidly.

The % of DOTS new cases that are ss+ (47%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (55%) is within expected range.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 45-54 year-olds (males). The maximum M:F rate ratio is 5.0 :1 among 65+ year-olds (Fig 2).

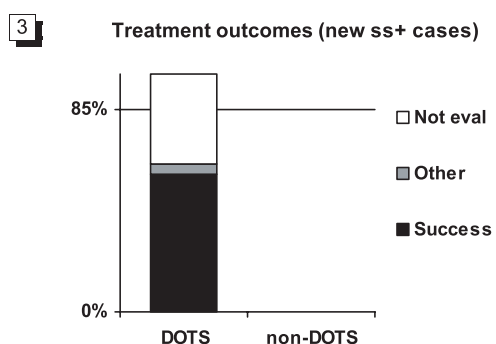
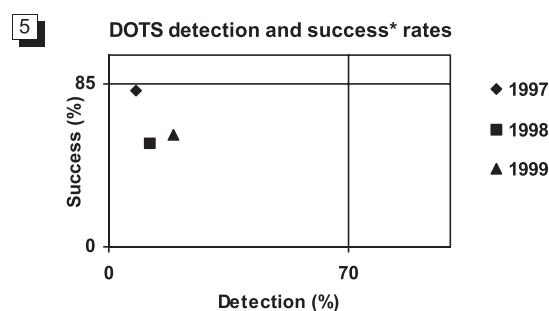
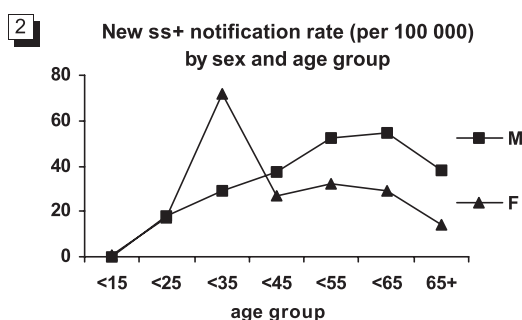
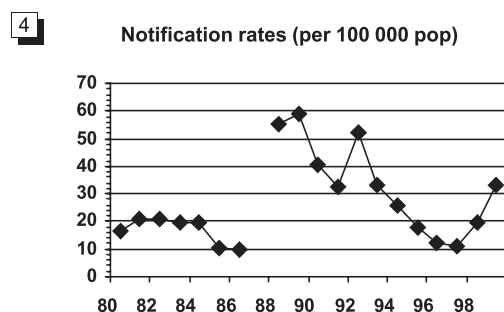
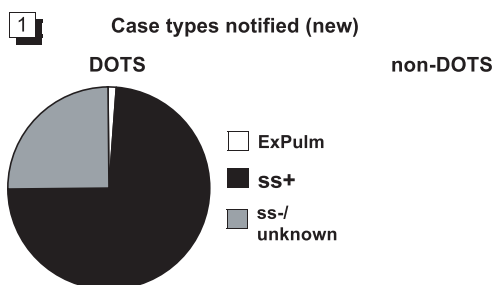
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Indonesia

Latest Information:	1999	Trends:	1997	1998	1999
Population	209 254 737	DOTS population coverage (%)	28	80	90
Est. incidence (all cases/100 000 pop)	282	Notification rate (all cases/100 000 pop)	11	20	33
Global rank (by est. no. new cases)	3	Detection (new ss+ cases, %)	7.5	12	19
Regional rank	2	- DOTS detection (new ss+, %)	7.5	12	19
TB cases that are HIV+ (%)	0.3	Treatment success (new ss+ cases, %)*	81	54	58
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	81	54	58
DOTS status (year adopted)	DOTS (1995)	Est. new ss+ treated successfully (%)*	4	4	9
		Retreatment success (all cases DOTS %)*			73



Number registered: 40166 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (73%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (74%) is higher than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 55-64 year-olds (males). The maximum M:F rate ratio is 2.7 :1 among 65+ year-olds (Fig 2).

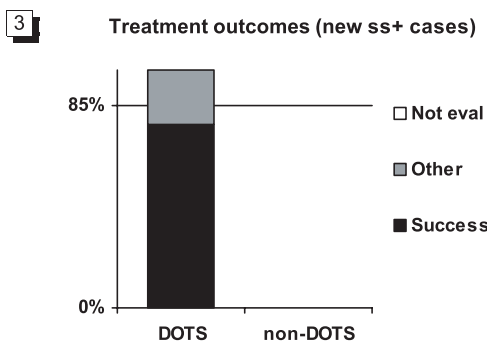
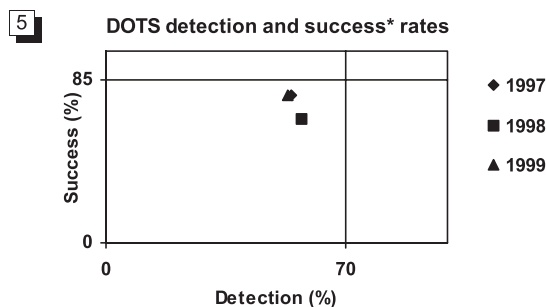
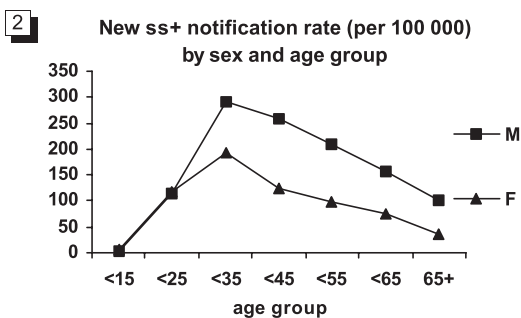
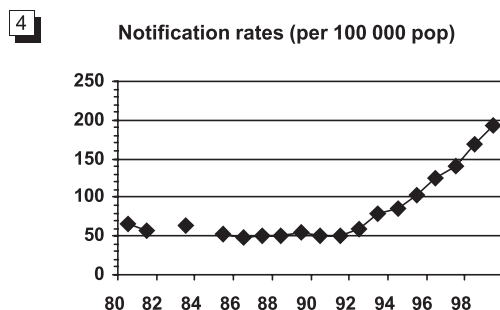
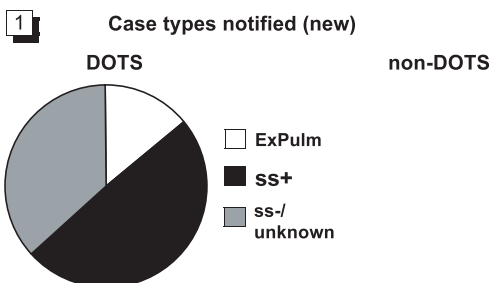
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Kenya

Latest Information:	1999	Trends:	1997	1998	1999
Population	29 549 205	DOTS population coverage (%)	100	100	100
Est. incidence (all cases/100 000 pop)	417	Notification rate (all cases/100 000 pop)	140	169	194
Global rank (by est. no. new cases)	13	Detection (new ss+ cases, %)	54	57	53
Regional rank	5	- DOTS detection (new ss+, %)	54	57	53
TB cases that are HIV+ (%)	49	Treatment success (new ss+ cases, %)*	77	65	77
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	77	65	77
DOTS status (year adopted)	DOTS (1993)	Est. new ss+ treated successfully (%)*	28	29	33
		Retreatment success (all cases DOTS %)*	59	55	64



Number registered: 21885 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (49%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (57%) is within expected range.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 25-34 year-olds (males). The maximum M:F rate ratio is 2.7 :1 among 65+ year-olds (Fig 2).

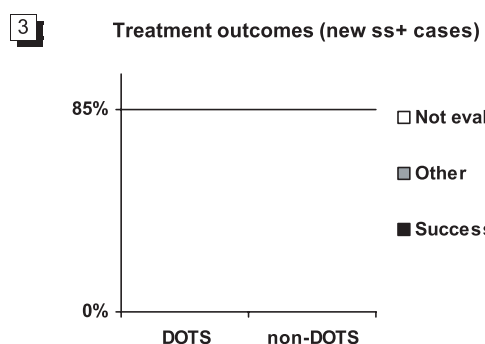
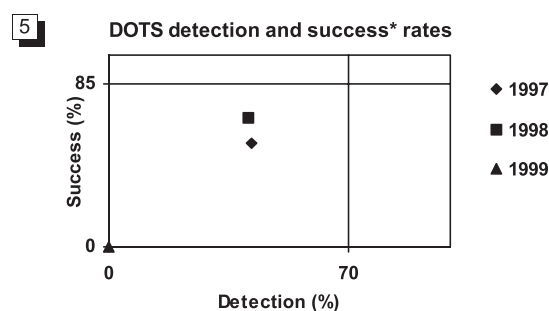
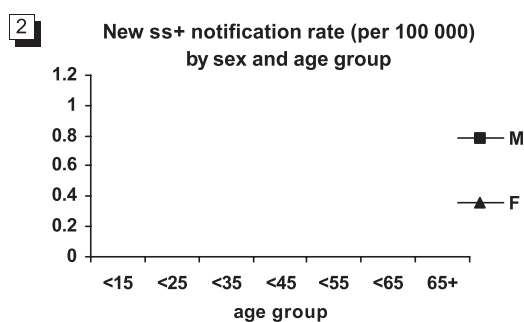
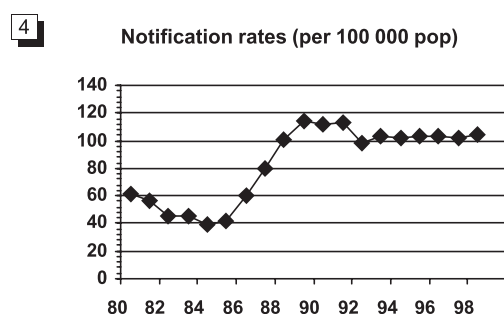
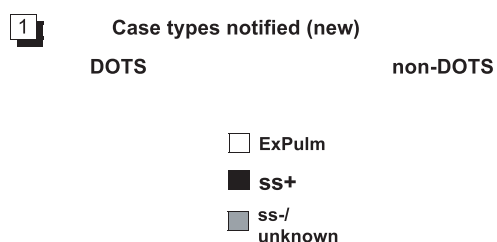
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Mozambique

Latest Information:	1999	Trends:	1997	1998	1999
Population	19 285 779	DOTS population coverage (%)	84	95	
Est. incidence (all cases/100 000 pop)	407	Notification rate (all cases/100 000 pop)	102	104	
Global rank (by est. no. new cases)	17	Detection (new ss+ cases, %)	42	41	
Regional rank	7	- DOTS detection (new ss+, %)	42	41	
TB cases that are HIV+ (%)	48	Treatment success (new ss+ cases, %)*	55	65	
Multi-drug resistance (new cases, %)	3.5	- DOTS treatment success (new ss+, %)*	54	67	
DOTS status (year adopted)	(1985)	Est. new ss+ treated successfully (%)*	27	25	
		Retreatment success (all cases DOTS %)*	70	64	



Number registered: DOTS, 0 non-DOTS

Observations:

The National TB control policy is NOT consistent with DOTS strategy.

The % of DOTS new cases that are ss+ (29%) is lower than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (34%) is lower than expected.

Age/sex incidence rates are not available for the most recent year of reporting (Fig 2).

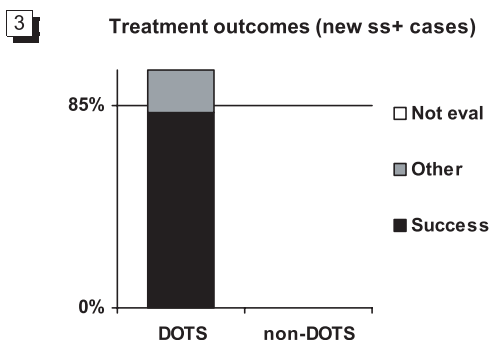
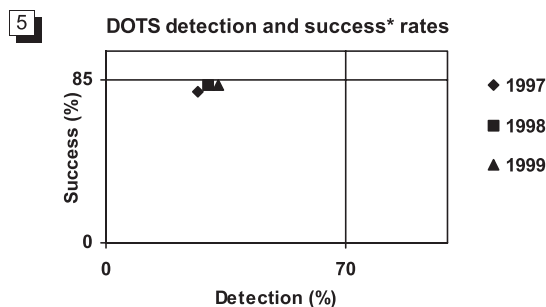
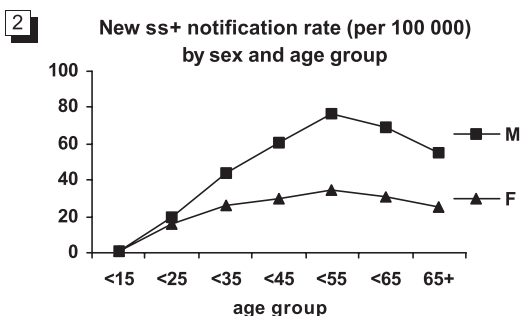
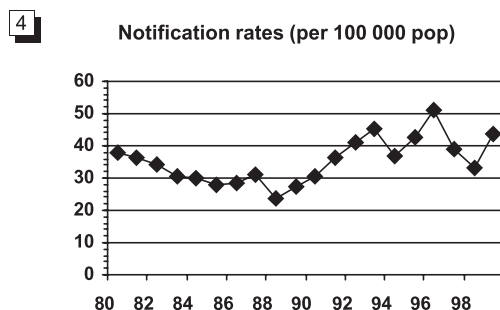
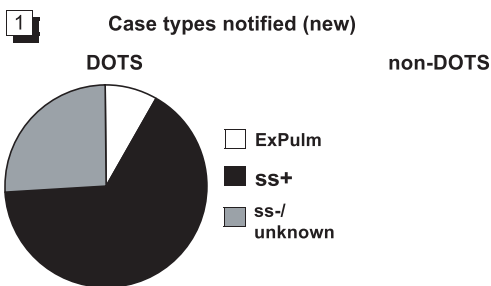
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Myanmar

Latest Information:	1999	Trends:	1997	1998	1999
Population	45 059 198	DOTS population coverage (%)	60	60	64
Est. incidence (all cases/100 000 pop)	169	Notification rate (all cases/100 000 pop)	39	33	44
Global rank (by est. no. new cases)	18	Detection (new ss+ cases, %)	29	30	33
Regional rank	5	- DOTS detection (new ss+, %)	27	30	33
TB cases that are HIV+ (%)	11	Treatment success (new ss+ cases, %)*	79	82	82
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	79	82	82
DOTS status (year adopted)	DOTS (1995)	Est. new ss+ treated successfully (%)*	23	22	25
		Retreatment success (all cases DOTS %)*	78	74	76



Number registered: 10313 DOTS, 0 non-DOTS

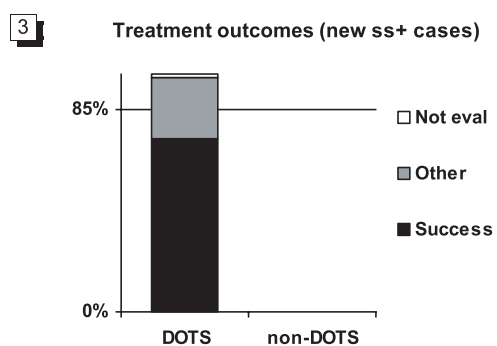
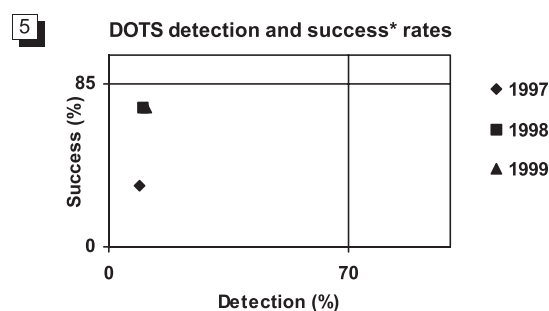
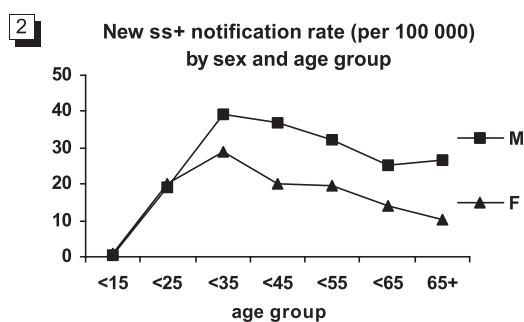
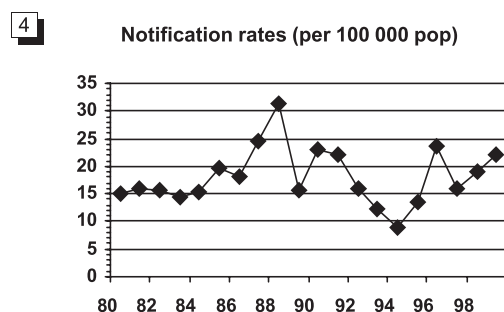
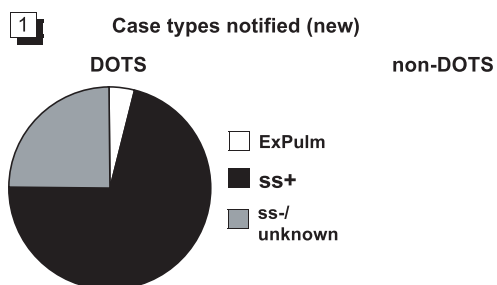
Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand. The % of DOTS new cases that are ss+ (65%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (71%) is higher than expected. The maximum ss+ notification rates are for 45-54 year-olds (females) and 45-54 year-olds (males). The maximum M:F rate ratio is 2.2 :1 among 65+ year-olds (Fig 2). The treatment success target (85%) has not yet been reached (Fig 3, 5). The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Nigeria

Latest Information:	1999	Trends:	1997	1998	1999
Population	108 945 056	DOTS population coverage (%)	40	45	45
Est. incidence (all cases/100 000 pop)	301	Notification rate (all cases/100 000 pop)	16	19	22
Global rank (by est. no. new cases)	4	Detection (new ss+ cases, %)	8.7	9.7	11
Regional rank	1	- DOTS detection (new ss+, %)	8.7	9.7	11
TB cases that are HIV+ (%)	24	Treatment success (new ss+ cases, %)*	32	73	73
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	32	73	73
DOTS status (year adopted)	DOTS (1993)	Est. new ss+ treated successfully (%)*	6	6	7
		Retreatment success (all cases DOTS %)*	71		78



Number registered: 13161 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand.

The % of DOTS new cases that are ss+ (68%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (74%) is higher than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 25-34 year-olds (males). The maximum M:F rate ratio is 2.6 :1 among 65+ year-olds (Fig 2).

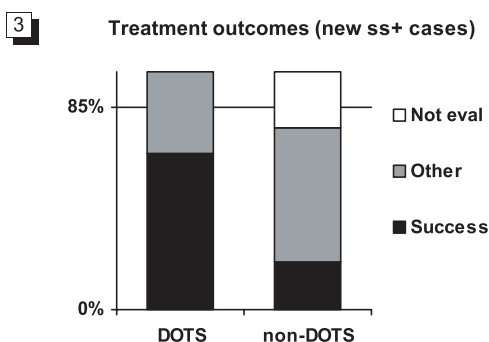
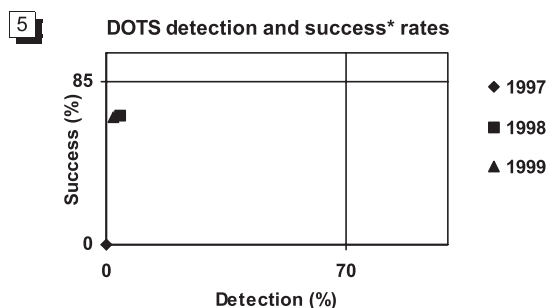
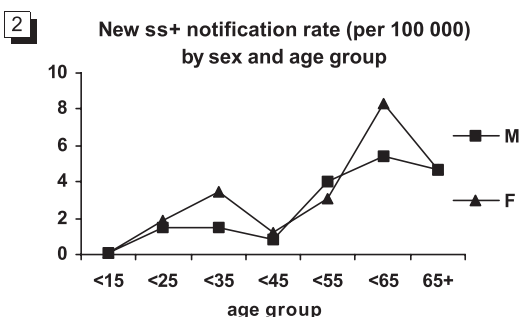
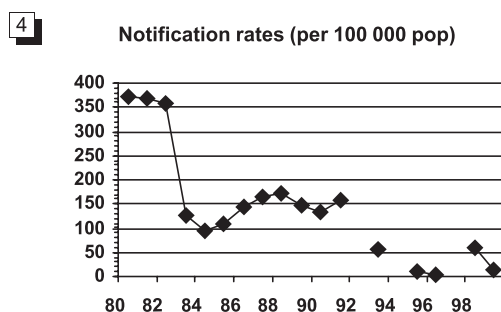
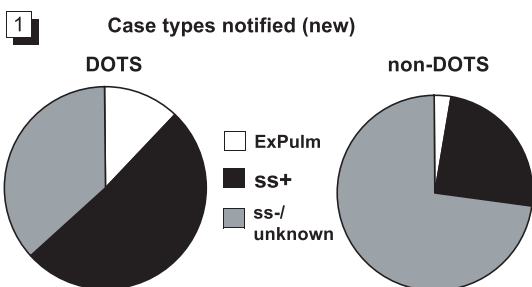
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Pakistan

Latest Information:	1999	Trends:	1997	1998	1999
Population	152 330 653	DOTS population coverage (%)		8	8
Est. incidence (all cases/100 000 pop)	177	Notification rate (all cases/100 000 pop)		61	14
Global rank (by est. no. new cases)	6	Detection (new ss+ cases, %)		13	5.2
Regional rank	1	- DOTS detection (new ss+, %)		3.5	1.9
TB cases that are HIV+ (%)	0.6	Treatment success (new ss+ cases, %)*		67	23
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*		67	66
DOTS status (year adopted)	DOTS (1995)	Est. new ss+ treated successfully (%)*		2	6
		Retreatment success (all cases DOTS %)*		57	92



Number registered: 1918 DOTS, 27470 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation, however, is limited.

The % of DOTS new cases that are ss+ (51%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (58%) is within expected range.

The maximum ss+ notification rates are for 55-64 year-olds (females) and 55-64 year-olds (males). The maximum M:F rate ratio is 0.4 :1 among 25-34 year-olds (Fig 2).

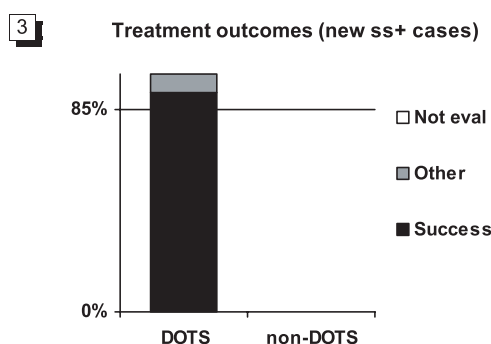
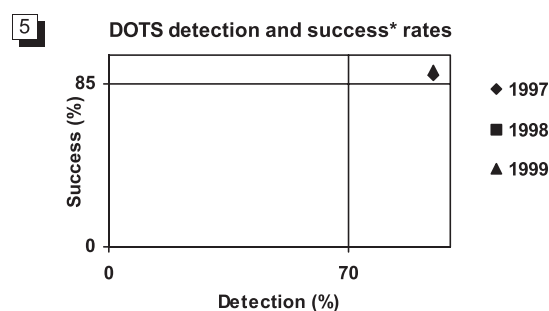
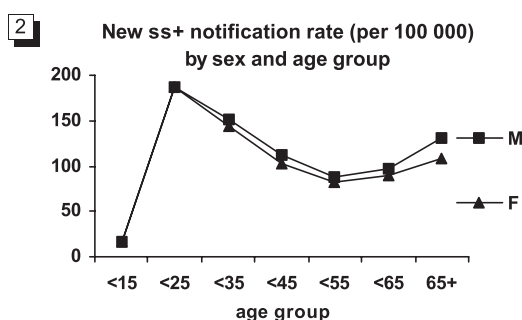
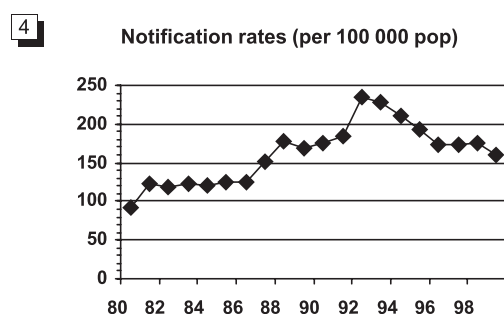
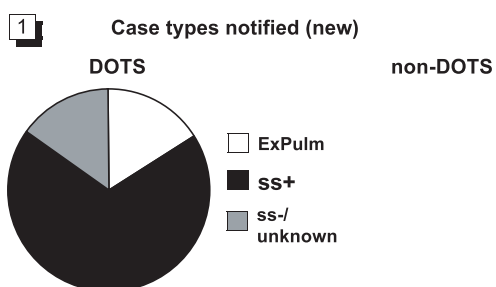
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Peru

Latest Information:	1999	Trends:	1997	1998	1999
Population	25 229 501	DOTS population coverage (%)	100	100	100
Est. incidence (all cases/100 000 pop)	228	Notification rate (all cases/100 000 pop)	173	176	160
Global rank (by est. no. new cases)	23	Detection (new ss+ cases, %)	95	101	95
Regional rank	2	- DOTS detection (new ss+, %)	95	101	95
TB cases that are HIV+ (%)	2.1	Treatment success (new ss+ cases, %)*	89	90	92
Multi-drug resistance (new cases, %)	3.0	- DOTS treatment success (new ss+, %)*	89	90	92
DOTS status (year adopted)	DOTS (1991)	Est. new ss+ treated successfully (%)*	72	80	94
		Retreatment success (all cases DOTS %)*	74		83



Number registered: 26137 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (69%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (82%) is higher than expected.

The maximum ss+ notification rates are for 15-24 year-olds (females) and 15-24 year-olds (males). The maximum M:F rate ratio is 1.2 :1 among 65+ year-olds (Fig 2).

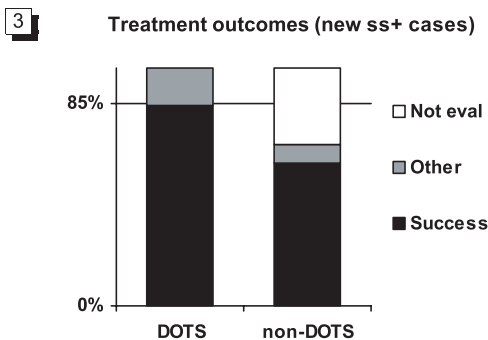
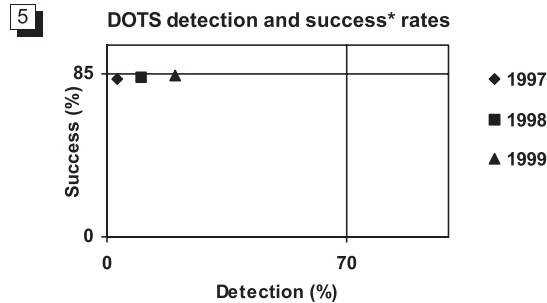
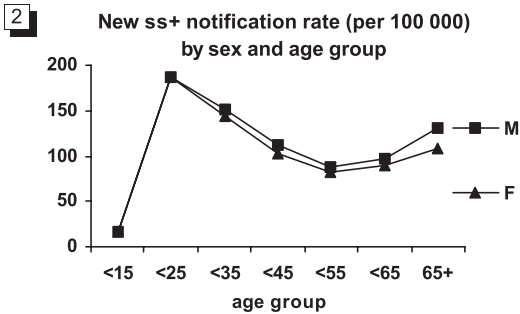
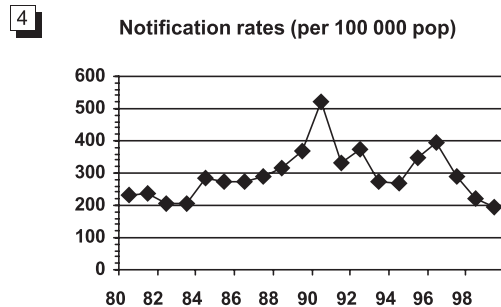
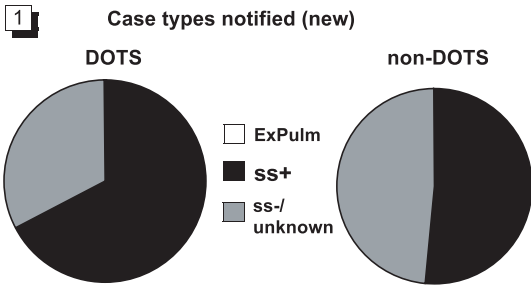
The treatment success target (85%) has been reached! (Fig 3, 5)

The case detection target (70%) has been reached! (Fig 5)

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Philippines (the)

Latest Information:	1999	Trends:	1997	1998	1999
Population	74 454 194	DOTS population coverage (%)	15	17	43
Est. incidence (all cases/100 000 pop)	314	Notification rate (all cases/100 000 pop)	292	219	196
Global rank (by est. no. new cases)	7	Detection (new ss+ cases, %)	83	70	70
Regional rank	2	- DOTS detection (new ss+, %)	3.2	10	20
TB cases that are HIV+ (%)	0.4	Treatment success (new ss+ cases, %)*	35	78	71
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	82	83	84
DOTS status (year adopted)	DOTS (1994)	Est. new ss+ treated successfully (%)*	44	21	14
		Retreatment success (all cases DOTS %)*	66	26	83



Number registered: 8976 DOTS, 11707 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is expanding rapidly.

The % of DOTS new cases that are ss+ (67%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (67%) is within expected range.

The maximum ss+ notification rates are for 15-24 year-olds (females) and 15-24 year-olds (males). The maximum M:F rate ratio is 1.2 :1 among 65+ year-olds (Fig 2).

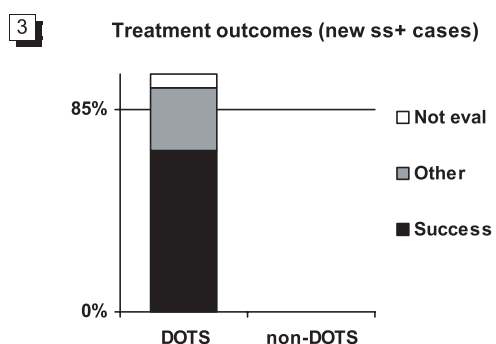
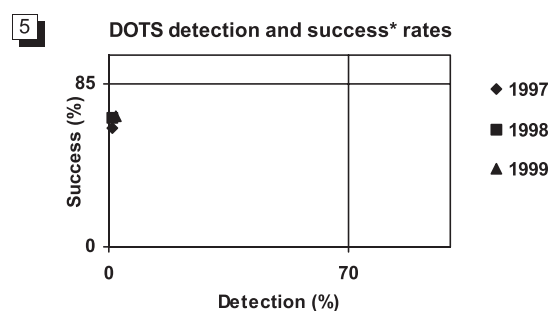
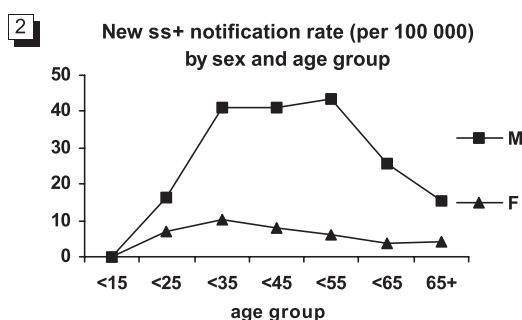
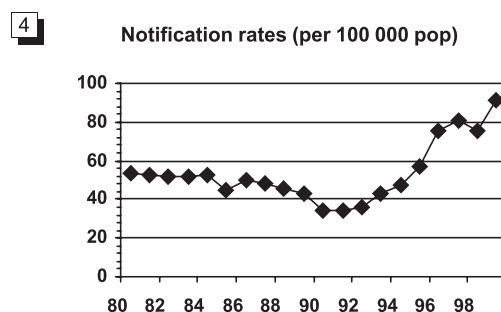
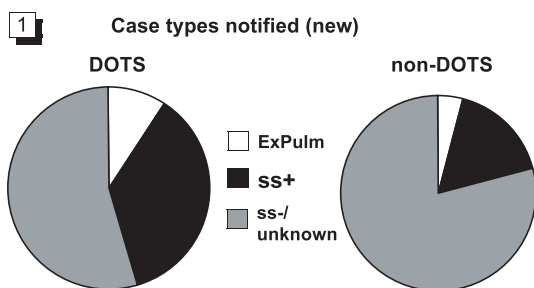
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has been reached but not maintained (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Russian Federation (the)

Latest Information:	1999	Trends:	1997	1998	1999
Population	147 195 504	DOTS population coverage (%)	2	5	5
Est. incidence (all cases/100 000 pop)	123	Notification rate (all cases/100 000 pop)	81	75	91
Global rank (by est. no. new cases)	10	Detection (new ss+ cases, %)	60	56	27
Regional rank	1	- DOTS detection (new ss+, %)	0.9	0.9	1.6
TB cases that are HIV+ (%)	1.0	Treatment success (new ss+ cases, %)*	57	67	68
Multi-drug resistance (new cases, %)	6.5-9.0 (2 oblasts)	- DOTS treatment success (new ss+, %)*	62	67	68
DOTS status (year adopted)	DOTS (1996)	Est. new ss+ treated successfully (%)*	35	1	1
		Retreatment success (all cases DOTS %)*	64		49



Number registered: 745 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation, however, is limited.

The % of DOTS new cases that are ss+ (36%) is lower than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (39%) is lower than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 45-54 year-olds (males). The maximum M:F rate ratio is 7.4 :1 among 45-54 year-olds (Fig 2).

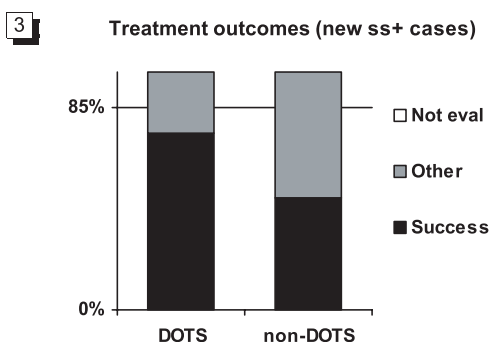
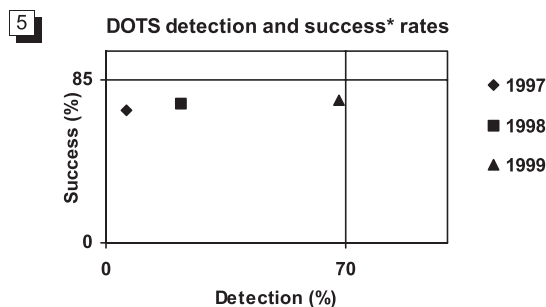
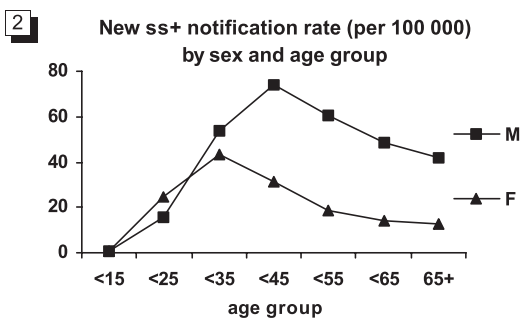
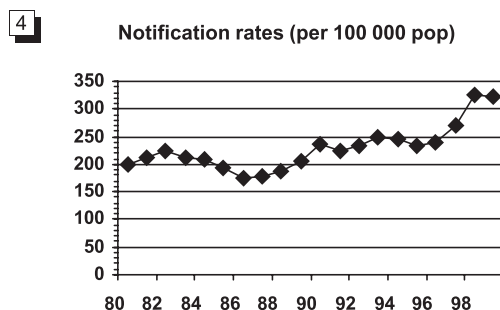
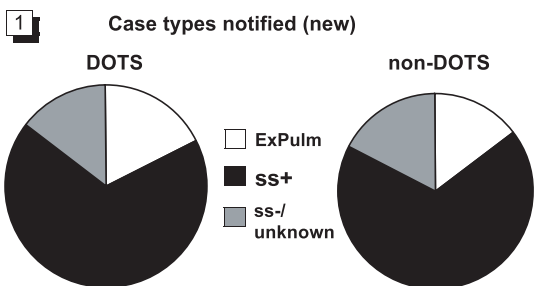
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

South Africa

Latest Information:	1999	Trends:	1997	1998	1999
Population	39 900 258	DOTS population coverage (%)	13	22	66
Est. incidence (all cases/100 000 pop)	495	Notification rate (all cases/100 000 pop)	271	326	323
Global rank (by est. no. new cases)	9	Detection (new ss+ cases, %)	82	112	97
Regional rank	3	- DOTS detection (new ss+, %)	6.2	22	68
TB cases that are HIV+ (%)	60	Treatment success (new ss+ cases, %)*	61	68	72
Multi-drug resistance (new cases, %)	1.5 (Mpumalanga)	- DOTS treatment success (new ss+, %)*	69	73	74
DOTS status (year adopted)	DOTS (1997)	Est. new ss+ treated successfully (%)*	41	51	33
		Retreatment success (all cases DOTS %)*	67	68	71



Number registered: 34432 DOTS, 2657 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is expanding rapidly.

The % of DOTS new cases that are ss+ (67%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (82%) is higher than expected.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 35-44 year-olds (males). The maximum M:F rate ratio is 3.4 :1 among 55-64 year-olds (Fig 2).

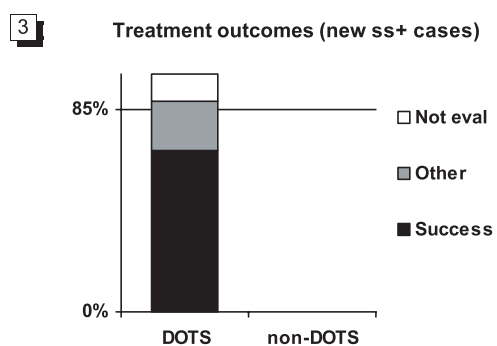
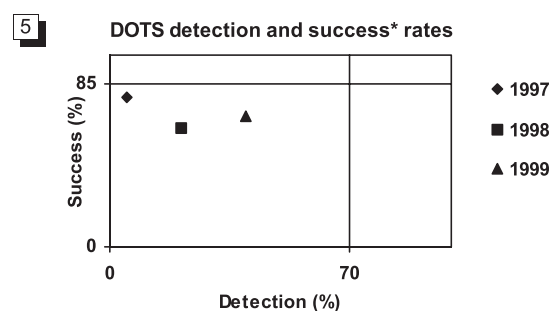
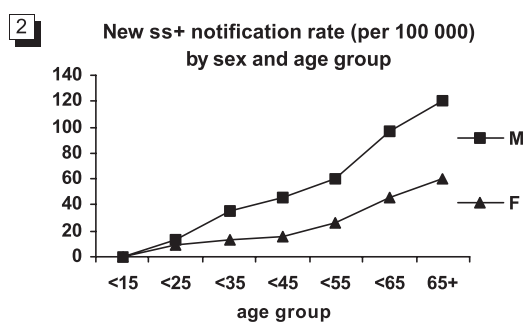
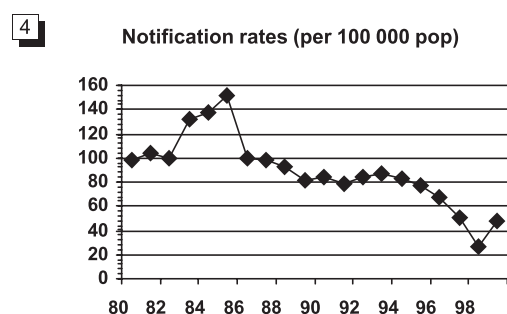
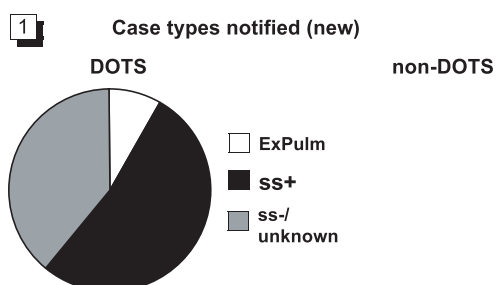
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has been reached! (Fig 5)

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Thailand

Latest Information:	1999	Trends:	1997	1998	1999
Population	60 856 253	DOTS population coverage (%)	4	32	59
Est. incidence (all cases/100 000 pop)	141	Notification rate (all cases/100 000 pop)	51	26	48
Global rank (by est. no. new cases)	16	Detection (new ss+ cases, %)	35	21	40
Regional rank	4	- DOTS detection (new ss+, %)	5.0	21	40
TB cases that are HIV+ (%)	12	Treatment success (new ss+ cases, %)*	78	58	68
Multi-drug resistance (new cases, %)	2.1	- DOTS treatment success (new ss+, %)*	78	62	68
DOTS status (year adopted)	DOTS (1996)	Est. new ss+ treated successfully (%)*	0	6	14
		Retreatment success (all cases DOTS %)*	57	55	55



Number registered: 7962 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is expanding rapidly.

The % of DOTS new cases that are ss+ (53%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (57%) is within expected range.

The maximum ss+ notification rates are for 65+ year-olds (females) and 65+ year-olds (males). The maximum M:F rate ratio is 3.0 :1 among 35-44 year-olds (Fig 2).

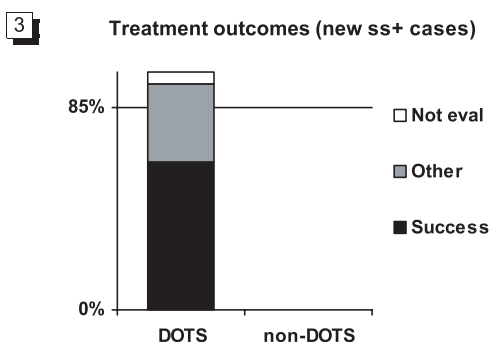
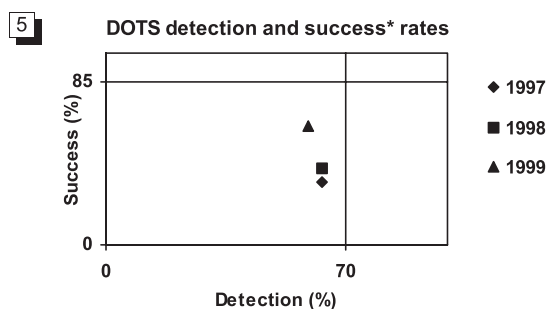
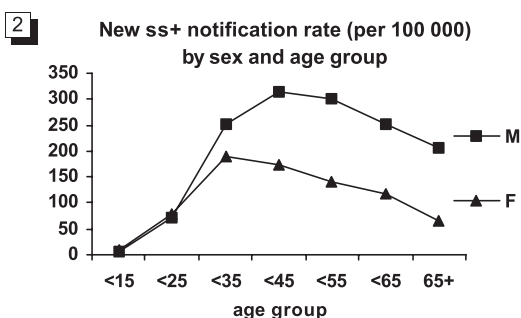
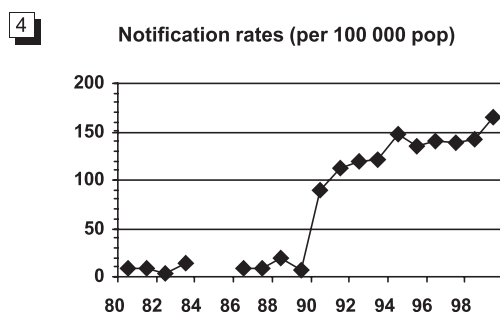
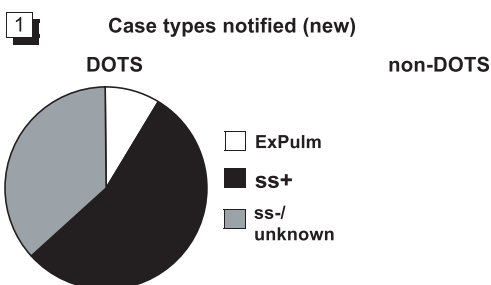
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Uganda

Latest Information:	1999	Trends:	1997	1998	1999
Population	21 143 118	DOTS population coverage (%)	100	100	100
Est. incidence (all cases/100 000 pop)	343	Notification rate (all cases/100 000 pop)	139	142	165
Global rank (by est. no. new cases)	19	Detection (new ss+ cases, %)	63	63	59
Regional rank	8	- DOTS detection (new ss+, %)	63	63	59
TB cases that are HIV+ (%)	35	Treatment success (new ss+ cases, %)*	33	40	62
Multi-drug resistance (new cases, %)	0.5	- DOTS treatment success (new ss+, %)*	33	40	62
DOTS status (year adopted)	DOTS (1993)	Est. new ss+ treated successfully (%)*	19	24	27
		Retreatment success (all cases DOTS %)*	32	58	60



Number registered: 13236 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (54%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (59%) is within expected range.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 35-44 year-olds (males). The maximum M:F rate ratio is 3.1 :1 among 65+ year-olds (Fig 2).

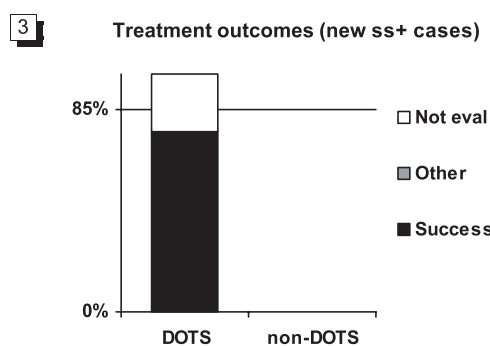
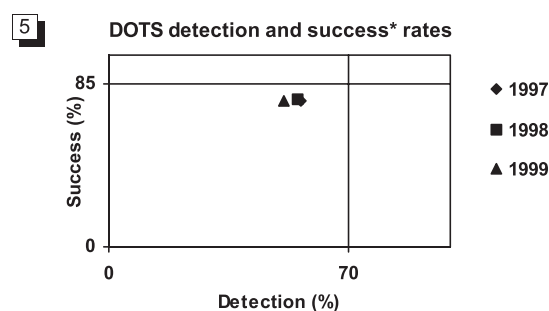
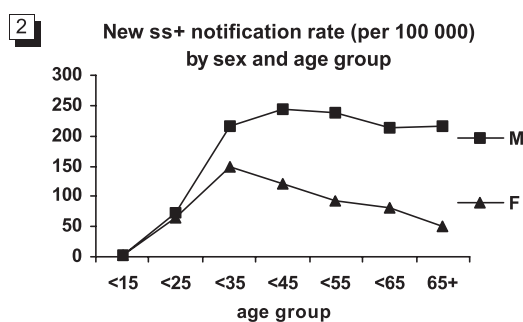
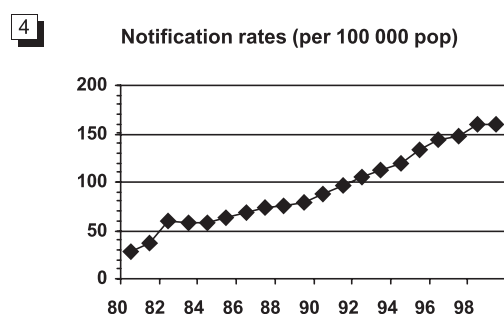
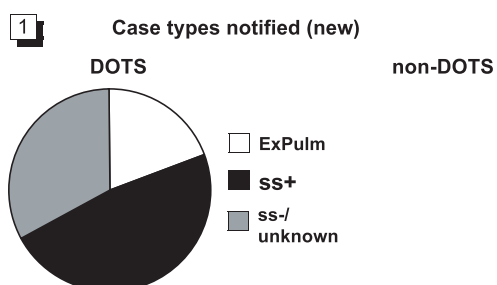
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

United Republic of Tanzania (the)

Latest Information:	1999	Trends:	1997	1998	1999
Population	32 792 556	DOTS population coverage (%)	100	100	100
Est. incidence (all cases/100 000 pop)	340	Notification rate (all cases/100 000 pop)	148	160	160
Global rank (by est. no. new cases)	15	Detection (new ss+ cases, %)	56	55	51
Regional rank	6	- DOTS detection (new ss+, %)	56	55	51
TB cases that are HIV+ (%)	35	Treatment success (new ss+ cases, %)*	76	77	76
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	76	77	76
DOTS status (year adopted)	DOTS (1984)	Est. new ss+ treated successfully (%)*	42	39	38
		Retreatment success (all cases DOTS %)*	75	75	73



Number registered: 23726 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (48%) is within expected range (Fig 1). The % of DOTS new pulmonary cases that are ss+ (59%) is within expected range.

The maximum ss+ notification rates are for 25-34 year-olds (females) and 35-44 year-olds (males). The maximum M:F rate ratio is 4.4 :1 among 65+ year-olds (Fig 2).

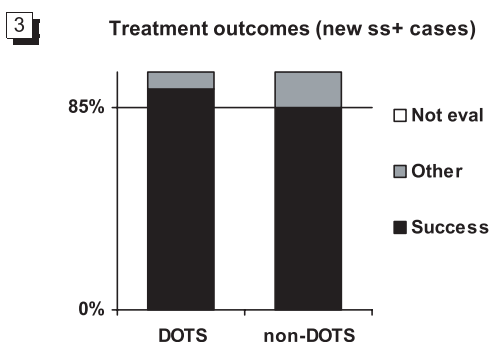
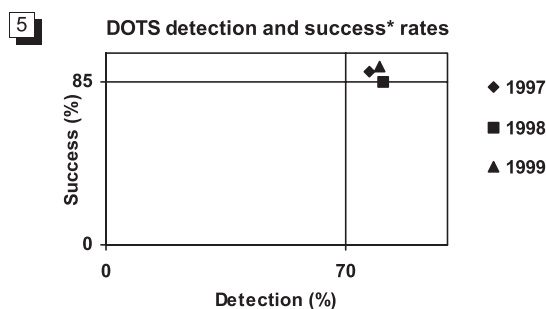
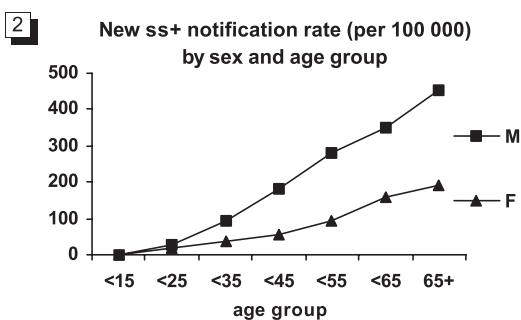
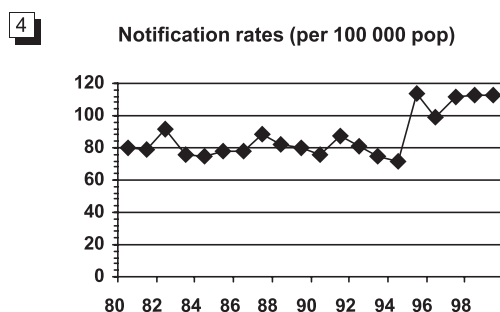
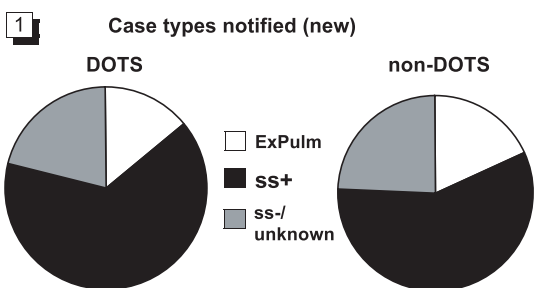
The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

Viet Nam

Latest Information:	1999	Trends:	1997	1998	1999
Population	78 705 124	DOTS population coverage (%)	93	96	99
Est. incidence (all cases/100 000 pop)	189	Notification rate (all cases/100 000 pop)	111	113	113
Global rank (by est. no. new cases)	12	Detection (new ss+ cases, %)	83	83	80
Regional rank	3	- DOTS detection (new ss+, %)	77	81	80
TB cases that are HIV+ (%)	1.4	Treatment success (new ss+ cases, %)*	89	85	92
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*	90	85	93
DOTS status (year adopted)	DOTS (1986)	Est. new ss+ treated successfully (%)*	66	69	75
		Retreatment success (all cases DOTS %)*	84	80	84



Number registered: 52799 DOTS, 1752 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation is widespread.

The % of DOTS new cases that are ss+ (65%) is higher than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (75%) is higher than expected.

The maximum ss+ notification rates are for 65+ year-olds (females) and 65+ year-olds (males). The maximum M:F rate ratio is 3.2 :1 among 35-44 year-olds (Fig 2).

The treatment success target (85%) has been reached! (Fig 3, 5)

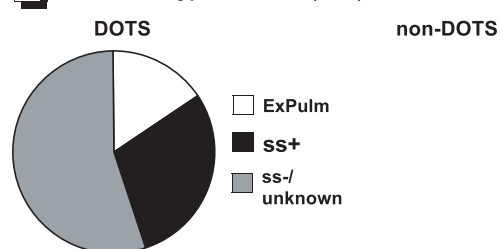
The case detection target (70%) has been reached! (Fig 5)

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

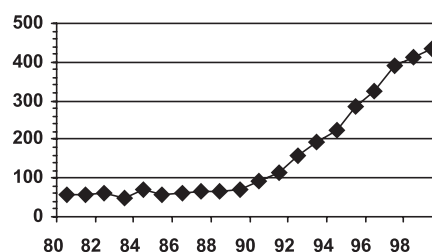
Zimbabwe

Latest Information:	1999	Trends:	1997	1998	1999
Population	11 529 116	DOTS population coverage (%)	0	100	12
Est. incidence (all cases/100 000 pop)	562	Notification rate (all cases/100 000 pop)	390	414	435
Global rank (by est. no. new cases)	21	Detection (new ss+ cases, %)	64	60	55
Regional rank	9	- DOTS detection (new ss+, %)		60	55
TB cases that are HIV+ (%)	67	Treatment success (new ss+ cases, %)*	32	69	70
Multi-drug resistance (new cases, %)	no data	- DOTS treatment success (new ss+, %)*			70
DOTS status (year adopted)	DOTS (1994)	Est. new ss+ treated successfully (%)*	17	35	34
		Retreatment success (all cases DOTS %)*			

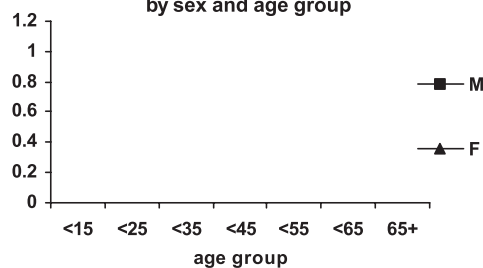
1 Case types notified (new)



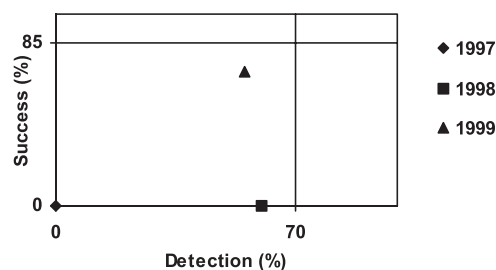
4 Notification rates (per 100 000 pop)



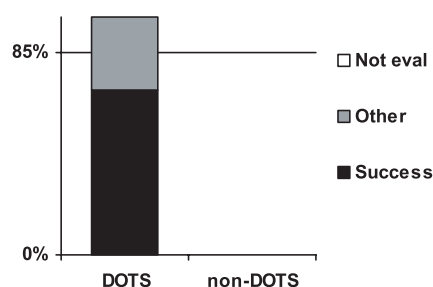
2 New ss+ notification rate (per 100 000) by sex and age group



5 DOTS detection and success* rates



3 Treatment outcomes (new ss+ cases)



Number registered: 12748 DOTS, 0 non-DOTS

Observations:

The National TB control policy is consistent with the DOTS strategy. Implementation has not continued to expand.

The % of DOTS new cases that are ss+ (29%) is lower than expected (Fig 1). The % of DOTS new pulmonary cases that are ss+ (34%) is lower than expected.

Age/sex incidence rates are not available for the most recent year of reporting (Fig 2).

The treatment success target (85%) has not yet been reached (Fig 3, 5).

The case detection target (70%) has not yet been reached (Fig 5).

* treatment results are shown by year reported, but they refer to the cohort of patients registered for treatment in the previous year.

ANNEX 4

Regional profiles

Africa

The Americas

Eastern Mediterranean

Europe

South-East Asia

Western Pacific

Explanatory notes

REGIONAL PROFILES

Regional profiles present country-specific data by region. Each regional profile consists of:

- A summary of TB control policies.
- The latest year's notification, detection, and coverage data—for the whole country, and for DOTS and other (non-DOTS) programmes.
- Treatment outcomes for the previous year's cohort—both treatment and retreatment outcomes from DOTS programmes, and treatment outcomes (where available) from other programmes.
- New smear-positive notification rates by age and sex for the whole country.
- New smear-positive notifications (numbers) by age and sex—from DOTS and from other programmes.
- Notification (all cases) rates and numbers, since 1980.
- Notification (new smear-positive cases) rates and numbers, over the last 5 years.
- Country notes: remarks from respondents that may help to explain data in selected countries' reports.

Notation for 1st table

- a The population of the country/territory.
- b The total number of tuberculosis cases notified to WHO.
- b/a The case notification rate (per 100 000 population).
- c The number of new smear-positive cases notified to WHO.
- c/a The new smear-positive case notification rate (per 100 000 population).
- d The estimated number of new sputum smear-positive cases.
- c/d The proportion of estimated new smear-positive that are notified.
- e The TB control category (WHO classification based on control strategy and estimated incidence of TB. See Table 1 for definitions).

- f The percent of the population living in geographic areas serviced by health facilities implementing TB control practices consistent with WHO recommendations (DOTS strategy).
- g Notification (all cases) from DOTS programmes.
- g/(f^a) The case notification rate (all cases, per 100 000 population) from DOTS programmes.
- h The number of new smear-positive cases notified by DOTS programmes.
- h/(f^a) The new smear-positive case notification rate (per 100 000 population) from DOTS programmes.
- i The proportion of all new pulmonary cases that are smear-positive.

- j–m As for f–i, above, but for other (non-DOTS) programmes.

Notation for 2nd table

- a The number of new smear-positive cases registered for treatment under DOTS in the previous year.
- b The proportion of registered new smear-positive cases that were not evaluated.
- c–h The proportion of registered new smear-positive cases with treatment outcomes as defined in Table 4 (cured, completed, died, failed, defaulted or transferred).
- c+d Treatment success (see Table 4).
- i–p See (a–h) of 2nd table, above. These outcomes are for DOTS retreatment cases (as defined in Table 3) in the previous year.
- q–x See (a–h) of 2nd table, above. These outcomes are for new smear-positive cases registered in other (non-DOTS) programmes in the previous year.

AFRICA

Africa: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Algeria						1	
Angola						3	
Benin						4	
Botswana						4	
Burkina Faso						4	
Burundi						4	
Cameroon						3	
Cape Verde						0	
Central African Republic (the)						1	
Chad						4	
Comoros (the)						0	
Congo (the)						1	
Côte d'Ivoire						3	
Democratic Republic of the Congo (the)						3	
Equatorial Guinea						0	
Eritrea						3	
Ethiopia						3	
Gabon						1	
Gambia (the)						0	
Ghana						3	
Guinea						4	
Guinea-Bissau						0	
Kenya						4	
Lesotho						0	
Liberia						0	
Madagascar						0	
Malawi						4	
Mali						3	
Mauritania						3	x
Mauritius						4	
Mozambique						0	
Namibia						4	
Niger (the)						0	
Nigeria						3	
Rwanda						4	
Sao Tome and Principe						1	
Senegal						4	
Seychelles						0	
Sierra Leone						0	
South Africa						3	
St. Helena						0	
Swaziland						0	
Togo						0	
Uganda						4	
United Republic of Tanzania (the)						4	
Zambia						0	
Zimbabwe						3	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional Profile for Africa: notification, detection and DOTS coverage, 1999

Country/Territory	Country information										WHO TB control strategy (DOTS)										Other Strategy (non-DOTS)									
	Pop thousands		all cases		New ss+		Est ss+ %	CDR %	DOTS category	% of pop	Notifications		New ss+		% of pulm cases ss+	Notifications		New ss+		% of pulm cases ss+										
	a	b	b/a	c	c/a	d					c/d	e	f	g		g/f*a	h	h/f*a	i		j	k	k/f*a	l	l/f*a	m				
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate								
Algeria	30 774	14 788	48	6 974	23	6 290	111	1	0	16 098	46	9 242	206	69	100	14 788	48	6 974	23	83										
Angola	12 479	16 098	129	9 242	74	14 850	62	3	36	2 751	46	2 192	37	95	0															
Benin	5 837	2 751	46	2 192	37	6 971	31	4	100	8 195	513	2 855	179	42	0															
Botswana	1 597	8 195	513	2 855	179	4 419	65	4	100	2 134	18	1 411	12	88	0															
Burkina Faso	11 616	2 134	18	1 411	12	15 878	9	4	100	6 365	97	2 924	45	59	0															
Burundi	6 565	6 365	97	2 924	45	10 505	28	4	100	2 818	7	2 003	38	81	64	4 842	52	3 829	41	85										
Cameroon	14 693	7 660	52	5 832	40	20 997	28	3	36																					
Cape Verde	418			317				0																						
Central African Rep	3 550	5 003	141	2 725	77	6 107	45	1	0	4 710	63	2 920	39	77	0	5 003	141	2 725	77	68										
Chad	7 458	4 710	63	2 920	39	8 844	33	4	100																					
Comoros	676			193				0																						
Congo	2 864	5 023	175	2 222	78	3 911	57	1	0	15 056	10	10 047	692	86	100	5 023	175	2 222	78	59										
Côte d'Ivoire	14 526	15 056	104	10 047	69	22 854	44	3	10	59 531	73	34 923	112	81	38															
DR Congo	50 335	59 531	118	34 923	69	65 445	53	3	62	6 037	97	527	24	10	40															
Equatorial Guinea	442			477				0		72 095	74	21 457	56	44	37															
Eritrea	3 719	6 037	162	527	14	4 443	12	3	60																					
Ethiopia	61 095	72 095	118	21 457	35	95 726	22	3	63	8 326	30	5 605	41	76	30	2 026	34	1 218	21	65										
Gabon	1 197	1 598	134	916	77	1 504	61	1	0	5 050	69	3 562	48	89	0															
Gambia	1 268			1 458				0		57 266	194	27 197	92	57	0															
Ghana	19 678	10 352	53	6 823	35	24 199	28	3	70																					
Guinea	7 360	5 050	69	3 562	48	8 317	43	4	100																					
Guinea-Bissau	1 187			1 397				0																						
Kenya	29 549	57 266	194	27 197	92	50 992	53	4	100	24 384	229	8 130	76	45	0															
Lesotho	2 108			4 604				0		3 998	31	2 368	25	76	14	475	31	322	21	80										
Liberia	2 930			3 490				0		2 464	47	1 389	107	77	50	1 185	91	662	51	73										
Madagascar	15 497			16 465				0		174	15	119	10	79	0															
Malawi	10 640	24 384	229	8 130	76	19 388	42	4	100																					
Mali	10 960	4 473	41	2 690	25	12 645	21	3	86																					
Mauritania	2 598	3 649	140	2 051	79	2 808	73	3	50																					
Mauritius	1 150	174	15	119	10	348	34	4	100																					
Mozambique	19 286			32 610				0																						
Namibia	1 695	7 951	469	3 550	210	3 377	105	4	100	7 951	469	3 550	210	59	0															
Niger	10 400			11 659				0																						
Nigeria	108 945	24 143	22	15 903	15	141 651	11	3	45	24 143	10	15 903	32	74	55															
Rwanda	7 235	6 483	90	4 298	59	11 539	37	4	100	6 483	90	4 298	59	83	0															
Sao Tome & Principe	144	97	67	81				1	0																					
Senegal	9 240	7 282	79	5 011	54	10 545	48	4	100	7 282	79	5 011	54	81	0															
Seychelles	77			14				0																						
Sierra Leone	4 717			5 661				0																						
South Africa	39 900	129 055	323	78 071	196	80 274	97	3	66	90 278	149	54 404	207	82	34	38 777	286	23 667	174	80										
St. Helena	6			0				0																						
Swaziland	980			2 219				0																						
Togo	4 512			6 068				0																						
Uganda	21 143	34 994	166	18 149	86	30 769	59	4	100	34 994	166	18 149	86	59	0															
Uganda	32 793	52 437	160	24 125	74	47 405	51	4	100	52 437	160	24 125	74	59	0															
Zambia	8 976			18 061				0																						
Zimbabwe	11 529	50 138	435	14 414	125	26 007	55	3	12	50 138	50	14 414	1078	34	88															

Regional profile for Africa, cont'd: smear-positive notification rates by age and sex, 1999

	MALE					FEMALE					ALL											
	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+							
Algeria	0.7	35.8	53.9	31.9	66.0	45.2	59.4	1.6	27.5	25.8	16.5	21.5	38.2	53.4	1.2	31.7	40.1	24.3	44.2	41.5	56.1	
Angola	13.2	97.0	162.0	186.3	146.7	137.6	146.7	15.5	101.5	147.3	135.7	125.3	85.2	97.8	14.3	99.3	154.6	160.4	135.6	110.0	119.6	
Benin	1.0	42.5	121.1	116.1	124.9	136.7	101.8	2.0	34.7	65.9	50.6	42.6	38.7	35.3	1.5	38.6	92.8	80.4	82.8	85.1	68.2	
Botswana	5.3	102.6	442.7	643.1	707.0	628.6	657.9	13.7	159.4	366.1	286.3	182.2	90.7	147.6	9.4	131.0	404.4	462.3	412.9	306.2	331.6	
Burkina Faso	0.5	7.4	31.7	46.9	39.9	43.1	40.9	0.3	5.8	18.2	19.7	20.0	17.9	12.0	0.4	6.6	25.0	33.2	29.6	29.7	25.0	
Burundi	4.2	55.4	131.6	158.0	173.0	126.8	84.5	4.3	45.5	57.2	71.9	56.0	25.9	26.0	4.3	50.4	93.9	113.8	109.2	67.3	48.5	
Cameroon	0.8	20.5	81.0	56.9	49.3	27.8	12.2	0.7	17.3	39.3	37.9	25.2	14.5	3.6	0.7	18.9	60.1	47.3	36.9	20.8	7.5	
Cape Verde																						
Central African Republic	3.7	65.0	233.1	227.5	115.6	93.8	110.7	9.5	104.7	203.8	111.4	70.9	60.7	52.9	6.6	85.3	217.9	167.0	91.8	75.8	77.4	
Chad	1.2	25.0	86.4	286.5	217.4	28.7	3.6	0.8	4.0	47.4	133.1	33.3	9.7	7.8	1.0	14.4	66.8	208.7	122.4	18.6	5.9	
Comoros																						
Congo	2.6	99.7	219.2	193.8	133.2	79.6	67.1	3.8	104.8	178.7	112.5	99.6	42.2	42.6	3.2	102.3	198.5	151.6	115.5	59.5	53.3	
Côte d'Ivoire	3.1	69.3	177.8	183.4	138.5	124.3	115.9	4.2	66.7	118.5	104.8	66.6	70.8	54.7	3.6	68.0	148.9	146.0	105.3	99.5	86.2	
DR Congo	3.9	86.3	187.6	202.3	166.4	148.9	103.5	5.9	94.5	156.2	145.8	118.4	83.2	37.5	4.9	90.4	171.8	173.6	141.5	113.5	65.6	
Equatorial Guinea																						
Eritrea	0.4	15.5	29.3	28.1	44.0	40.9	35.9	0.4	18.3	36.4	19.0	24.7	21.3	11.9	0.4	16.9	32.9	23.5	34.1	30.7	22.5	
Ethiopia	4.9	67.1	89.1	68.0	56.7	41.4	29.9	5.7	58.0	74.4	56.6	39.3	18.9	7.1	5.3	62.6	81.9	62.4	48.0	29.9	17.1	
Gabon	5.8	96.7	208.3	218.2	157.4	122.2	100.8	6.3	95.2	143.0	110.9	63.4	76.2	36.6	6.1	95.9	175.4	164.0	109.4	97.9	65.8	
Gambia																						
Ghana	0.7	15.1	42.4	54.2	62.8	51.3	69.4	0.9	12.7	27.9	25.8	23.6	23.3	27.0	0.8	13.9	35.1	39.8	42.8	36.8	46.4	
Guinea	1.8	58.3	146.0	149.2	131.2	129.7	112.6	2.7	47.6	79.7	75.4	48.2	53.6	37.7	2.3	53.0	113.1	112.6	89.3	90.0	72.1	
Guinea-Bissau																						
Kenya	3.6	114.8	290.4	258.6	208.9	157.6	100.8	5.8	117.2	193.4	123.1	97.9	76.0	37.1	4.7	116.0	242.2	190.8	152.0	114.5	66.1	
Lesotho																						
Liberia																						
Madagascar																						
Malawi	1.7	55.7	215.3	251.3	218.2	140.7	101.1	3.2	101.1	210.5	168.1	120.9	75.7	39.2	2.4	78.2	212.9	208.3	166.1	105.3	66.5	
Mali	0.4	10.5	35.4	51.1	57.1	56.5	36.8	0.4	8.0	16.8	19.4	19.2	21.0	12.5	0.4	9.2	26.1	34.8	37.0	37.1	23.0	
Mauritania	1.3	56.1	128.2	108.4	108.7	120.5	126.3	0.6	30.6	33.3	43.3	44.8	41.2	20.7	1.0	43.4	80.5	75.0	76.1	78.7	66.1	
Mauritius	0.0	6.5	20.6	15.9	20.9	36.7	40.0	0.0	12.4	7.6	7.7	12.6	5.4	7.3	0.0	9.4	14.3	11.8	16.7	20.0	21.1	
Mozambique																						
Namibia	5.6	138.2	715.4	710.6	448.0	344.0	360.6	7.7	192.6	433.6	279.9	183.4	177.6	95.5	6.7	165.2	574.7	493.9	312.2	255.6	215.4	
Niger																						
Nigeria	0.7	19.0	39.3	36.7	32.2	25.3	26.6	1.1	20.1	28.8	20.2	19.6	13.8	10.4	0.9	19.6	34.0	28.3	25.7	19.2	17.7	
Rwanda	5.6	32.3	107.6	141.9	122.6	60.7	41.7	3.6	24.4	52.2	53.7	25.0	24.0	5.1	4.6	28.3	79.6	97.1	72.1	41.3	20.8	
Sao Tome and Principe																						
Senegal	2.4	78.6	172.0	174.3	152.6	138.3	182.6	2.8	48.4	69.4	68.0	63.9	56.3	45.2	2.6	63.5	120.6	120.6	107.4	95.1	105.8	
Seychelles																						
Sierra Leone																						
South Africa	0.4	8.0	26.8	37.1	30.2	24.2	20.8	0.5	12.3	21.6	15.9	9.3	7.2	6.2	0.5	10.2	24.2	26.5	19.5	14.8	11.7	
St. Helena																						
Swaziland																						
Togo																						
Uganda	5.9	70.5	251.6	312.4	301.3	252.1	205.6	8.2	76.9	188.1	173.6	140.2	117.3	66.0	7.0	73.7	219.9	242.7	217.7	179.7	128.9	
UR Tanzania	2.3	73.5	216.8	244.6	237.1	212.5	216.0	3.1	65.1	148.4	120.0	93.9	82.7	49.6	2.7	69.3	182.0	181.3	163.1	144.2	124.3	
Zambia																						
Zimbabwe																						
Regional rate	2.4	44.5	104.1	106.2	92.8	73.8	67.1	3.2	44.0	73.8	59.5	45.6	34.8	24.0	2.8	44.3	88.9	82.7	68.6	53.1	42.8	

Regional profile for Africa, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
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	13 507	16 522	15 324	14 788	14 788
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	7 982	7 982	15 424	14 326	12 293	16 098
Benin	1 835	1 862	1 793	1 804	2 041	2 041	2 162	1 901	2 027	1 941	2 084	2 162	2 420	2 340	2 119	2 400	2 372	1 939	2 384	2 751
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	5 655	6 636	6 919	4 764	8 195
Burkina Faso	2 577	2 391	2 265	3 061	8 771	4 547	1 018	1 407	949	1 616	1 497	1 488	1 443	1 443	861	2 572	1 814	1 643	2 074	2 134
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
Cameroun	2 434	2 236	3 765	3 445	3 338	3 393	2 138	3 878	4 982	5 521	5 892	6 814	6 903	7 064	7 312	3 292	3 049	3 952	5 022	7 660
Cape Verde	516	344	393	230	285	259	285	276	210	221	210	221	210	221	210	221	196	196	205	205
Central African Rep	651	758	1 475	1 686	468	520	779	499	814	64	2 124	2 045	2 124	2 045	3 339	3 623	3 623	4 459	4 875	5 003
Chad	220	286	127	1 977	1 430	1 486	1 285	1 086	2 977	2 572	2 591	2 912	2 884	2 871	3 303	3 186	1 936	2 180	2 784	4 710
Comoros	742	1 214	3 716	4 156	2 776	2 648	3 120	3 473	3 878	4 363	5 911	6 18	1 179	1 976	2 982	3 615	4 469	3 417	3 863	5 023
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
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	45 576	58 894	59 531
Equatorial Guinea					181	17	1	11	20	157	260	331	262	309	356	306	319	366	416	
Eritrea	40 096	42 423	52 403	56 824	65 045	71 731	80 846	85 867	95 521	80 795	88 634	60 006	60 006	926	1 034	1 115	951	1 434	1 380	1 598
Ethiopia	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
Gabon	239	58																		
Gambia	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	4 131	10 449	10 745	10 173	10 352
Ghana	1 884	1 469	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	3 465	4 286	4 326	4 783	5 050
Guinea-Bissau	645	465	205	376	368	530	1 310	752	778	1 362	1 163	1 246	1 059	1 558	1 647	1 748	1 728	1 728	48 936	57 266
Kenya	11 049	10 027	11 966	11 966	10 460	10 022	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
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	4 324	4 361	4 361	5 481	6 002	6 002
Liberia	774	1 002	835	885	425	425	232	384	894	5 417	6 261	6 015	8 126	9 855	10 671	12 718	12 718	14 661	14 661	14 661
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	12 718	12 718	14 661	14 661	14 661
Malawi	4 758	5 033	4 411	4 707	4 404	5 334	6 301	7 581	8 247	9 431	12 364	14 322	15 183	17 105	19 496	19 155	20 630	20 676	22 764	24 384
Mali	839	933	817	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	4 473
Mauritania	7 576	9 427	2 327	2 333	3 977	4 406	2 257	3 722	3 928	4 040	5 284	3 064	4 316	3 996	3 849	3 849	3 788	3 788	3 649	3 649
Mauritius	132	157	121	152	118	111	119	117	114	129	119	134	130	130	159	149	153	135	135	174
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	19 672
Namibia	717	2 871	754	673	665	4 840	4 427	3 640	2 815	3 703	2 671	2 500	1 756	5 500	3 784	1 980	6 773	6 004	7 972	7 951
Niger	9 877	10 838	10 949	10 212	11 439	14 937	14 071	19 723	25 700	13 342	20 122	19 626	14 802	11 601	8 449	13 423	24 065	16 660	20 249	24 143
Nigeria	1 495	1 386	1 364	1 364	1 419	1 327	2 460	3 287	4 145	4 741	6 387	3 200	3 200	11 601	8 449	13 423	24 065	16 660	20 249	24 143
Rwanda	131	37	40	59	49	40	8	55	13	17	17	120	120	120	120	120	120	120	120	120
Sao Tome & Principe	2 014	2 573	1 612	2 417	1 065	1 065	927	6 145	5 611	5 965	4 977	6 781	7 408	6 841	6 913	7 561	8 525	8 232	8 475	7 282
Senegal	16	0	16	16	10	10	24	14	10	6	41	41	5	5	5	9	15	20	11	11
Seychelles	750	847	889	293	816	865	388	130	120	632	1 466	1 466	1 865	2 691	2 584	1 955	3 241	3 160	3 270	3 270
Sierra Leone	55 310	59 943	64 115	62 556	62 717	59 349	55 013	57 406	61 486	68 075	80 400	77 652	82 539	89 786	90 292	86 924	91 578	105 169	128 415	129 055
St. Helena																				
Swaziland	143	3 059	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955	1 955
Togo	208	126	204	174	343	745	596	1 184	1 071	940	1 324	1 243	1 223	1 005	1 137	3 031	1 654	0	1 212	1 212
Uganda	1 058	1 170	497	2 029	1 392	1 464	1 392	1 464	3 066	1 045	14 740	19 016	20 662	21 579	26 994	25 476	27 356	27 725	29 228	34 994
UR Tanzania	5 103	6 964	11 748	11 783	12 092	13 698	15 452	16 920	18 206	19 282	22 249	25 210	28 462	31 460	34 799	39 847	44 416	46 433	51 231	52 437
Zambia	5 342	6 070	6 519	6 948	6 500	6 747	7 909	11 525	12 876	14 239	22 902	23 373	25 732	36 889	35 222	12 744	40 417	40 417	40 417	40 417
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	47 277	50 138
Total	213 443	218 852	240 257	258 960	264 156	295 127	300 917	335 342	373 438	365 405	424 538	411 993	434 227	425 291	550 142	493 941	696 941	565 154	654 557	644 972
number reporting	40	41	39	41	37	41	41	43	44	41	43	40	37	41	37	45	41	38	41	31
percent reporting	85	87	83	87	79	87	87	91	94	87	91	85	79	87	79	96	87	81	87	66

Regional profile for Africa, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Algeria	14	70	66	62	63	57	49	48	45	45	47	44	44	50	49	48	56	51	48	48	
Angola	144	104	107	87	130	114	101	94	107	107	111	117	114	81	68	73	136	122	102	129	
Benin	53	52	49	48	49	51	52	45	46	43	45	45	49	46	41	45	43	34	41	46	
Botswana	294	277	278	286	297	250	235	274	229	205	230	249	308	333	331	384	440	449	303	513	
Burkina Faso	37	34	31	41	11	58	13	17	11	18	17	16	16	15	9	25	17	15	18	18	
Burundi	19	15	22	24	41	49	53	55	73	87	84	87	78	79	64	54	61	84	101	97	
Cameroon	28	25	41	37	34	34	21	37	46	50	51	58	56	57	57	25	23	28	35	52	
Cape Verde	178	118	133	77	94	84	89	89	84	63	65	68	68	65	65	80	46	49	50	50	
Central African Rep.	28	32	61	68	18	20	29	18	29	2	72	68	2	102	108	130	140	140	141	141	
Chad	5	6	3	41	29	29	25	20	54	46	45	49	44	46	51	48	28	31	38	63	
Comoros	45	71	210	229	149	138	158	171	185	202	27	27	19	23	20	21	23	20	20	175	
Congo	51	52	57	65	64	58	59	61	60	62	67	67	73	75	106	89	95	98	104	104	
Côte d'Ivoire	19	11	34	44	67	82	85	80	87	87	57	87	93	87	88	94	98	95	120	118	
DR Congo	19	11	34	44	67	82	85	80	87	87	57	87	93	87	88	94	98	95	120	118	
Equatorial Guinea					62	6	0	3	6	46	74	92	71	82	92	77	78	87	97	97	
Eritrea											128	148	148	385	501	673	158	242	218	162	
Ethiopia	110	114	138	146	163	174	191	196	212	173	184	121	118	0	184	47	323	102	117	118	
Gabon	125	112	104	99	84	107	93	101	82	101	98	94	94	95	99	104	86	126	118	134	
Gambia	37	9																			
Ghana	48	36	38	22	16	25	29	43	37	41	42	46	44	52	99	23	58	58	53	53	
Guinea	41	32	18	25	26	22	23	23	32	34	35	38	46	48	48	48	59	59	65	69	
Guinea-Bissau	81	57	25	44	43	61	147	83	84	143	120	125	104	150	155	161	156	140	169	194	
Kenya	66	58	65	65	53	49	49	49	50	55	50	51	58	79	86	103	126	140	169	194	
Lesotho	303	277	348	237	196	192	1	14	143	146	147	170	185	184	230	252	221	272	291	291	
Liberia	41	52	42	43	39	19	10	16	36	48	54	50	65	80	84	67	38	66	66	66	
Madagascar	102	82	38	37	88	32	36	38	40	48	54	50	65	77	80	157	90	97	97	97	
Malawi	77	79	68	70	64	74	83	94	96	105	132	151	159	179	203	198	210	205	220	229	
Mali	12	13	3	7	24	21	23	31	30	19	33	29	34	34	32	31	36	48	39	41	
Mauritania	489	593	143	139	231	250	124	200	205	205	261	147	202	181	165	165	154	154	140	140	
Mauritius	14	16	12	15	12	11	12	11	11	12	11	13	12	15	14	14	14	12	12	15	
Mozambique	62	56	45	45	39	42	61	80	101	115	112	113	99	104	103	103	103	102	104	104	
Namibia						411	366	293	220	282	198	180	123	376	370	100	428	370	480	469	
Niger	13	50	13	11	10	11	8	8	9	8	67	7	7	7	43	22	39	34	34	34	
Nigeria	15	16	16	14	16	20	18	25	31	16	23	22	16	12	9	14	24	16	19	22	
Rwanda	29	26	24	24	24	22	39	50	60	67	91	48	48	86	85	58	65	79	93	90	
Sao Tome & Principe	140	38	41	58	47	38	7	50	12	14	14	99	96	96	91	100	94	94	94	79	
Senegal	36	45	28	40	17	15	14	91	81	84	68	90	96	86	85	91	100	94	94	79	
Seychelles	25	0	25	25	15	15	36	21	15	9	59	59	7	7	12	12	20	27	15	15	
Sierra Leone	23	26	26	9	23	24	10	4	3	3	16	36	41	66	62	47	76	72	72	72	
South Africa	201	213	223	213	209	193	175	179	188	204	236	224	233	249	245	232	240	271	326	323	
St. Helena																					
Swaziland																					
Togo	8	5	7	6	12	25	19	37	32	28	38	34	33	26	29	75	40	0	28	28	
Uganda	8	9	4	14	57	63	69	73	76	78	87	96	104	112	120	133	145	148	160	160	
UR Tanzania	28	36	59	58	57	63	69	73	76	78	87	96	104	112	120	133	145	148	160	160	
Zambia	93	103	108	113	104	105	121	172	187	202	316	315	338	473	440	156	482	390	416	435	
Zimbabwe	57	55	60	50	70	57	60	65	65	71	93	116	157	192	224	284	324	390	416	435	
Total	58	58	62	65	64	69	69	75	81	77	87	82	84	80	101	88	122	96	109	105	

Regional profile for Africa, cont'd: new smear-positive cases, 1993-99

Country/territory	Number of cases									Rate (per 100 000 population)								
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999				
Algeria		6 793	5 735	7 740	7 740	7 462	6 974		25	20	26	26	25	23				
Angola	4 874	4 337	5 951	8 016	8 201	7 350	9 242	48	41	54	71	70	61	74				
Benin	1 653	1 618	1 839	1 868	1 939	1 988	2 192	33	31	34	34	34	34	37				
Botswana	1 508	1 668	1 903	2 393	2 442	2 826	2 855	108	116	129	159	159	180	179				
Burkina Faso		561	1 028	1 381	1 126	1 331	1 411		6	10	13	10	12	12				
Burundi	1 861	1 527	1 121	1 533	2 022	2 782	2 924	32	25	18	24	32	43	45				
Cameroon	2 316	1 883	2 896	2 312	3 548	4 374	5 832	19	15	22	17	25	31	40				
Cape Verde			111	117	103	104				29	30	26	25					
Central African Republic		1 794	1 992	2 267	2 637	2 637	2 725			55	59	66	76	77				
Chad			2 002	870			2 920			30	13			39				
Comoros			105	111		94				17	18		14					
Congo		1 691	2 013	2 505	1 984	2 044	2 222		68	79	95	73	73	78				
Côte d'Ivoire	7 012	8 254	8 927	9 093	9 093	9 850	10 047	55	61	65	65	65	69	69				
DR Congo	14 924	20 084	24 125	25 183	33 419	34 923	34 923	35	44	52	52	52	68	69				
Equatorial Guinea		219	209	226	284	3 362	3 562		31	32	39	41	46	48				
Eritrea			956	922	109	223	527			88	83		6	14				
Ethiopia	5 752	9 040	15 694	15 957	18 864	21 457	21 457	11	16	16	28	27	32	35				
Gabon	395		486	263	577	889	916	38	38	45	24	51	76	77				
Gambia		778	743	820	900	900				70	65	69	73					
Ghana		5 778	6 474	7 287	7 005	6 823	6 823		34	15	36	39	37	35				
Guinea	2 082	2 158	2 263	2 844	2 981	3 362	3 562	31	31	32	39	41	46	48				
Guinea-Bissau			956	922	109	223	527			88	83		6	14				
Kenya	10 149	11 324	13 934	16 978	19 040	24 029	27 197	39	43	51	61	67	83	92				
Lesotho	1 405	1 330	1 361	1 788	2 398	2 476	2 476	76	71	71	91	119	120					
Liberia	1 547		1 154	668		1 190		70		55	30		45					
Madagascar	6 881	7 366	8 026	8 456	9 639	9 639	8 130	54	55	58	60	64	64	76				
Malawi		5 988	6 293	6 703	7 587	8 553	8 130		62	65	68	75	86	76				
Mali		1 740	1 866	2 173	3 178	2 558	2 690		18	19	21	30	24	25				
Mauritania			2 074		2 519		2 051		89	89	102		9	10				
Mauritius			131		108		119			12			9					
Mozambique	9 526	9 677	10 566	10 478	11 116	12 116	12 116	59	58	61	58	60	64					
Namibia			697	2 820	2 674	3 490	3 550			45	178	165	210	210				
Niger	463	1 865	1 492	2 779	2 127	2 127		5	21	16	28	28	21					
Nigeria	1 723	9 476	15 704	11 235	13 161	15 903	15 903	2		10	15	11	12	15				
Rwanda		1 840	2 034	2 820	4 417	4 298				35	37	47	67	59				
Sao Tome and Principe																		
Senegal		4 599	5 421	5 940	5 340	5 454	5 011		57	65	69	61	61	54				
Seychelles	2		6	9	11	10		3		8	12	15	13					
Sierra Leone		1 408	1 454	2 234	2 296	2 262			34	35	52	52	50					
South Africa										4	98	142	209	196				
St. Helena																		
Swaziland			660	2 226						76	248							
Togo	545		887	913		932		14		22	22		21					
Uganda	11 949	14 763	13 678	15 175	17 268	18 222	18 149	67	80	72	78	86	89	86				
UR Tanzania			19 955	21 472	22 010	23 726	24 125			67	70	70	74	74				
Zambia		9 620	8 577	12 072					120	105	144		144					
Zimbabwe	5 331		8 965	11 965	14 512	14 492	14 414	51		82	108	129	127	125				
Total	85 751	103 841	191 137	260 285	275 388	339 343	321 260	16	19	34	45	47	56	52				

Notes

Burkina Faso Age/sex data from some units included all cases, rather than smear-positive cases only.

Chad Treatment outcomes were not reported from all DOTS units.

Côte d'Ivoire Age/sex data were incomplete.

Democratic Republic of the Congo (the) Retreatment success was 43% among registered relapses cases. For other retreatment cases, the number registered was not available; the success rate among those evaluated was 25%.

Gabon The number of patients who died was not provided.

Kenya Separate results were provided for 2 283 smear-positive nomadic patients treated under DOTS using a long-course regimen and evaluated at the end of a 4-month inpatient phase: 77% of these patients had converted to smear-negative at 4 months.

Rwanda Age/sex data were based on first semester 1999 only.

São Tome and Príncipe The standard WHO data collection form was not used.

Senegal Twenty-two percent of sub-national reports were not received.

South Africa Information system did not allow distinction between new and retreatment extra-pulmonary cases. Age/sex data following WHO age categories were from 2 of 9 provinces.

Uganda Age/sex data excluded 623 new smear-positive notifications from reporting units where age/sex data were not provided.

Zimbabwe DOTS notification and outcome data combined cases receiving DOT and case receiving unobserved treatment regimens.

THE AMERICAS

The Americas: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Anguilla						0	
Antigua and Barbuda						5	
Argentina						3	
Bahamas (the)						4	x
Barbados						4	x
Belize						0	
Bermuda						0	
Bolivia						4	
Brazil						2	
British Virgin Islands						0	
Canada						0	
Cayman Islands						5	
Chile						4	
Colombia						3	
Costa Rica						3	x
Cuba						4	
Dominica						0	
Dominican Republic (the)						3	x
Ecuador						3	
El Salvador						3	
Grenada						0	
Guatemala						3	
Guyana						0	
Haiti						3	
Honduras						3	
Jamaica						4	
Mexico						3	
Montserrat						1	
Netherlands Antilles						0	
Nicaragua						4	
Panama						3	
Paraguay						1	
Peru						4	
Puerto Rico						4	
Saint Kitts and Nevis						4	
Saint Lucia						4	
Saint Vincent and the Grenadines						0	
Suriname						1	
Trinidad and Tobago						4	x
Turks and Caicos Islands						4	x
United States of America (the)						4	
United States Virgin Islands						0	
Uruguay						4	
Venezuela						4	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional profile for the Americas, cont'd: age and sex distribution of smear-positive cases in DOTS areas, 1999 (absolute numbers)

	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 and Barbuda																						
Argentina	30	168	187	149	159	131	130	37	172	151	100	72	61	85	67	340	338	249	231	192	215	
Bahamas	1	0	10	8	6	0	0	0	1	3	4	2	0	0	1	1	13	12	8	0	0	
Barbados																						
Belize																						
Bermuda																						
Bolivia	222	1 182	862	527	482	379	400	225	798	554	352	263	205	222	447	1 980	1 416	879	745	584	622	
Brazil	17	211	283	284	224	168	133	22	177	218	135	79	63	75	39	388	501	419	303	231	208	
British Virgin Islands																						
Canada																						
Cayman Islands																						
Chile	4	118	173	204	206	132	132	9	87	109	97	52	76	98	13	205	282	301	258	208	230	
Colombia	95	503	470	635	600	408	408	0	0	0	0	0	0	0	95	503	470	635	600	408	408	
Costa Rica	0	8	7	17	9	8	15	2	6	4	5	4	3	3	2	14	11	22	13	11	18	
Cuba	1	55	163	97	68	72	100	2	15	37	27	20	28	35	3	70	200	124	88	100	135	
Dominica																						
Dominican Republic	9	33	41	38	27	23	26	6	32	32	21	19	17	17	15	65	73	59	46	40	43	
Ecuador																						
El Salvador	18	102	128	104	88	88	104	20	81	73	61	47	44	65	38	183	201	165	135	132	169	
Grenada																						
Guatemala	34	216	248	235	171	141	158	24	229	230	194	174	121	89	58	445	478	429	345	262	247	
Guyana																						
Haiti	98	362	480	290	150	88	67	112	393	396	260	131	66	40	210	755	876	550	281	154	107	
Honduras	2	6	119	73	55	29	4	2	3	20	24	24	13	2	4	9	139	97	79	42	6	
Jamaica	2	10	16	6	6	15	6	2	5	9	3	4	5	3	4	15	25	9	10	20	9	
Mexico	78	667	764	699	604	493	593	83	487	507	392	367	346	376	161	1 154	1 271	1 091	971	839	969	
Montserrat																						
Netherlands Antilles																						
Nicaragua	26	217	212	167	125	75	85	27	194	168	108	73	42	45	53	411	380	275	198	117	130	
Panama	1	10	11	6	8	3	1	0	4	5	5	2	1	1	1	14	16	11	10	4	2	
Paraguay																						
Peru	712	4 861	3 007	1 586	852	624	714	700	4 783	2 958	1 560	838	613	703	1 412	9 644	5 965	3 146	1 690	1 237	1 417	
Puerto Rico	0	5	5	23	9	11	20	1	4	9	3	6	5	6	1	9	14	26	15	16	26	
Saint Kitts and Nevis																						
Saint Lucia																						
St Vincent & Grenadines	1				3	3			1	1						2	1		3	3		
Suriname																						
Trinidad and Tobago	0	11	18	13	8	5	6	0	4	6	7	3	4	1	0	15	24	20	11	9	7	
Turks & Caicos Islands																						
Uruguay	1	45	48	42	46	48	41	4	20	25	33	14	11	14	5	65	73	75	60	59	55	
US Virgin Islands																						
USA	21	329	617	1 003	927	600	795	16	232	389	397	244	243	438	37	561	1 006	1 400	1 171	843	1 233	
Venezuela	32	378	452	420	368	283	346	28	283	315	195	169	134	267	60	661	767	615	537	417	613	
Regional total	1 404	37 072	56 397	34 607	19 759	10 820	8 854	5 443	35 894	39 182	19 760	10 088	5 773	4 479	10 015	72 966	95 579	54 367	29 847	16 593	13 333	

Regional profile for the Americas, cont'd: age and sex distribution of smear-positive cases in non-DOTS areas, 1999 (absolute numbers)

	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+							
Anguilla																					
Antigua & Barbuda																					
Argentina	60	322	359	286	305	253	250	71	330	291	192	138	116	164							
Bahamas																					
Barbados																					
Belize																					
Bermuda																					
Bolivia	284	3 451	5 118	5 543	4 406	2 466	1 988	350	2 732	3 232	2 486	1 582	979	1 031							
Brazil																					
British Virgin Is																					
Canada																					
Cayman Islands	0	0	0	1	0	0	0	0	1	0	0	0	0	0							
Chile																					
Colombia	175	1 227	1 003	1 161	900	219	802	0	0	0	0	0	0	0							
Costa Rica	4	20	56	72	61	43	58	8	17	38	32	28	30	33							
Cuba																					
Dominica																					
Dominican Rep	81	474	444	318	211	143	157	93	331	327	205	141	104	119							
Ecuador																					
El Salvador																					
Grenada																					
Guatemala																					
Guyana																					
Haiti	188	450	579	382	198	98	78	173	526	522	354	181	96	70							
Honduras	148	282	149	146	165	161	48	98	211	181	140	136	127	38							
Jamaica																					
Mexico	65	346	377	394	418	387	535	68	286	288	249	298	246	334							
Montserrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Netherlands Antilles																					
Nicaragua																					
Panama	37	97	198	128	98	78	71	53	79	95	57	50	42	36							
Paraguay	19	113	157	111	114	69	67	22	84	72	56	43	48	60							
Peru																					
Puerto Rico																					
Saint Kitts and Nevis																					
Saint Lucia																					
St Vincent & Grenadines																					
Suriname																					
Trinidad and Tobago																					
Turks & Caicos Islands																					
Uruguay																					
US Virgin Islands																					
USA																					
Venezuela																					
Regional total	1 061	9 329	12 835	15 435	19 108	5 829	4 671	1 233	6 921	7 906	10 309	9 245	2 932	2 376	2 496	16 250	20 741	25 744	28 353	8 761	7 047

Regional profile for the Americas, cont'd: smear-positive notification rates by age and sex, 1999

	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 and Barbuda																						
Argentina	0.9	7.3	10.6	9.9	12.6	14.3	13.1	1.1	7.7	8.6	6.5	5.4	5.9	6.0	1.0	7.5	9.6	8.2	8.9	9.8	8.9	
Bahamas	2.1	0.0	39.0	36.7	47.8	0.0	0.0	0.0	3.8	11.5	17.1	14.5	0.0	0.0	1.1	1.9	25.1	26.5	30.4	0.0	0.0	
Barbados																						
Belize																						
Bermuda																						
Bolivia	13.4	147.4	146.8	131.6	171.1	208.7	276.6	14.1	100.6	92.3	83.6	86.5	101.2	124.2	13.8	124.1	119.2	107.0	127.2	152.0	192.3	
Brazil	0.6	10.9	19.5	25.4	30.8	29.1	28.7	0.8	8.7	12.2	11.0	10.3	10.2	11.6	0.7	9.8	15.8	18.0	20.2	19.0	19.1	
British Virgin Islands																						
Canada																						
Cayman Islands																						
Chile	0.2	9.5	14.1	18.6	27.6	27.3	30.0	0.4	7.2	9.0	8.8	6.7	14.1	15.8	0.3	8.4	11.6	13.6	17.0	20.4	21.7	
Colombia	1.9	21.5	21.6	34.2	44.5	18.5	70.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	10.9	10.6	16.5	21.2	8.8	31.2	
Costa Rica	0.3	3.6	9.9	16.6	20.7	25.2	39.7	0.8	3.2	6.9	7.0	9.6	16.0	17.1	0.5	3.4	8.4	11.8	15.2	20.6	27.7	
Cuba	0.1	7.0	14.5	11.8	10.6	15.0	20.0	0.2	2.0	3.4	3.2	3.0	5.6	6.4	0.1	4.5	9.0	7.5	6.7	10.3	12.8	
Dominica																						
Dominican Republic	3.2	31.1	33.6	32.2	34.5	39.3	50.9	3.6	23.1	25.8	21.2	24.4	29.4	36.2	3.4	27.2	29.8	26.8	29.6	34.4	43.4	
Ecuador																						
El Salvador	1.6	15.2	27.7	37.1	42.0	62.6	79.0	1.8	12.3	14.6	18.5	20.2	28.1	38.1	1.7	13.7	20.9	27.0	30.5	44.4	55.9	
Grenada																						
Guatemala	1.4	18.5	33.5	49.4	53.4	66.2	84.1	1.0	20.2	30.9	39.4	53.0	56.2	43.9	1.2	19.3	32.2	44.3	53.2	61.2	63.3	
Guyana																						
Haiti	8.4	48.0	96.2	90.8	73.4	59.5	56.0	8.7	54.5	80.9	72.9	54.3	42.9	34.3	8.5	51.2	89.3	81.2	62.9	50.4	44.0	
Honduras	5.5	21.8	28.9	35.8	59.8	81.1	26.3	3.8	16.7	22.0	26.8	42.8	56.9	17.4	4.7	19.3	25.5	31.3	51.2	68.7	21.5	
Jamaica	0.5	4.0	7.5	3.9	6.3	23.1	7.4	0.5	2.1	4.1	1.8	4.1	7.5	3.1	0.5	3.1	5.8	2.8	5.2	15.2	5.0	
Mexico	0.4	5.1	7.1	10.0	14.1	19.2	27.8	0.5	3.9	4.7	5.5	8.6	11.9	14.3	0.4	4.5	5.8	7.7	11.2	15.4	20.4	
Montserrat																						
Netherlands Antilles																						
Nicaragua	2.4	41.5	62.6	75.1	90.3	91.3	125.5	2.6	37.1	47.2	45.5	50.0	48.1	53.1	2.5	39.3	54.7	59.8	69.6	69.1	85.2	
Panama	4.2	20.2	43.8	37.2	42.6	50.1	48.3	6.1	16.1	21.2	17.1	21.2	27.1	23.4	5.1	18.2	32.6	27.1	32.0	38.7	35.5	
Paraguay	1.7	21.4	39.5	35.9	59.8	63.7	86.7	2.1	16.4	18.6	18.7	23.4	42.8	55.3	1.9	18.9	29.2	27.4	42.0	53.1	68.4	
Peru	16.4	186.6	151.6	111.8	87.6	96.8	130.8	16.6	186.1	143.2	102.7	82.1	89.6	108.7	16.5	186.4	147.3	107.1	84.8	93.0	118.8	
Puerto Rico	0.0	1.5	1.7	9.9	4.5	7.6	11.7	0.2	1.2	3.0	1.1	2.5	2.9	2.7	0.1	1.4	2.4	5.2	3.4	5.0	6.6	
Saint Kitts and Nevis																						
Saint Lucia																						
St Vincent & Grenadines																						
Suriname																						
Trinidad and Tobago	0.0	8.3	17.9	13.7	12.2	12.5	15.6	0.0	3.1	6.0	7.3	4.6	9.4	2.2	0.0	5.7	11.9	10.5	8.4	10.9	8.3	
Turks & Caicos Islands																						
Uruguay	0.2	16.7	20.6	20.4	27.3	34.9	23.8	1.0	7.7	10.7	15.2	7.7	6.9	5.5	0.6	12.3	15.6	17.7	17.1	19.9	13.0	
US Virgin Islands																						
USA	0.1	1.7	3.1	4.4	5.1	5.3	5.5	0.1	1.3	2.0	1.8	1.3	2.0	2.2	0.1	1.5	2.6	3.1	3.2	3.6	3.6	
Venezuela	0.8	16.1	24.2	28.3	36.1	49.9	73.6	0.7	12.5	17.1	13.2	16.5	22.5	47.1	0.7	14.3	20.7	20.8	26.3	35.9	59.1	
Regional rate	1.4	15.5	18.7	19.7	22.1	21.8	24.1	1.4	12.2	12.4	9.8	9.1	10.4	9.7	1.4	13.9	15.5	14.7	15.4	15.8	15.9	

Regional profile for the Americas, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Anguilla	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0			
Antigua & Barbuda	8	3	0	1	3	7	0	0	3	3	1	0	6			5	13 397	12 358	12 276	11 200	
Argentina	16 406	16 693	17 292	17 305	16 359	14 681	13 368	13 267	12 636	12 309	12 185	12 606	13 887	13 887	13 683	13 433	13 397	89	75	76	
Bahamas	70	67	54	58	53	52	43	51	52	46	53	63	60	60	78	57	59	89	6		
Barbados	64	30	30	17	14	12	7	3	4	5	5	5	6	6	20	20	3	3	6	3	
Belize	21	33	44	140	35	23	41	28	30	57	89	65	80	80	59	61	53	89			
Bermuda	1	2	5	10	3	6	6	1	2	2	3	4			4	4					
Bolivia	4 412	5 072	4 777	5 178	4 131	6 837	8 960	10 664	12 563	11 166	11 223	9 520	8 614	8 614	9 431	14 422	10 194	9 853	10 132	9 863	
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	88 109	87 254	83 309	84 194	78 460	
British Virgin Is																		3			
Canada	2 885	2 554	2 515	2 186	2 345	1 980	2 046	1 972	1 947	1 997	2 018	2 108	2 012	2 012	2 074	1 931	1 869	1 975			
Cayman Islands	0	2	0	1	1	4	1	0	0	2	2	3	3			3	0	0	3	2	
Chile	8 523	7 337	6 941	6 989	6 561	6 644	6 854	6 280	6 324	6 151	5 498	5 304	4 598	4 598	4 138	4 150	4 038	3 879	3 668	3 429	
Colombia	11 589	11 483	12 126	13 716	12 792	11 639	11 437	11 469	11 329	12 447	12 263	11 199	11 043	11 043	8 901	9 912	9 702	8 042	9 155	10 999	
Costa Rica	396	521	459	479	393	376	418	434	442	311	230	201	118	313	325	321	162	633	694	851	
Cuba	1 133	833	815	762	705	680	656	630	628	581	546	514	410	790	1 681	1 607	1 579	1 441	1 304	1 177	
Dominica	20	26	18	16	5	8	35	27	7	13	6	14	13	7	12	8	10	6	5		
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	6 006	5 601	4 263	5 978	
Ecuador	3 950	3 966	3 880	3 985	4 301	4 798	5 887	5 867	5 487	8 243	6 879	7 313	7 050	7 050	9 885	7 893	6 327	9 527	9 184	6 173	
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	
Grenada	17	1	1	6	4	2	1	2	0	4	0	1	3	0	3	2	2	4	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	5 726	3 496	3 175	2 755	3 046	
Guayana	124	117	135	149	165	215	190	117	150	120	168	134	182	91	266	296	314	407	318		
Haiti	8 306	6 550	3 337	6 839	5 803	4 959	8 583	8 514	8 054	8 100	10 237	10 237	10 237				6 632	10 116	9 857	9 124	
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	4 544	
Jamaica	176	178	153	157	160	130	88	133	65	86	123	121	111	115	109	109	121	118	124	115	
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	10 852	23 575	17 170	15 466	
Montserrat	1	0	0	1	7	9	5	13	6	5	1	1	0						3	1	
Netherlands Antilles																					
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	
Panama	643	580	580	429	413	614	709	765	770	672	846	863	750	1 146	827	1 316	1 089	1 067	1 479	1 445	
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	2 305	2 148	1 995	1 858	2 115	
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	
Puerto Rico	666	521	473	452	418	338	363	303	275	314	159	241			274	263	219	236	200	200	
Saint Kitts & Nevis	7	4	6	2	3	0	0	0	0	0	0	1	4	6	2	4	3		5	3	
Saint Lucia	41	39	37	48	55	21	34	25	32	28	13	25	26		24	12		15	21	16	
St Vincent & Grenadines	78	11	14	4	23	14	9	3	6	3	2	1	4	13	0	24			5		
Suriname	78	81	56	78	76	50	60	77	77	70	82	47	58				53	71		93	
Trinidad & Tobago	80	82	62	112	108	112	119	122	108	124	120	141	142	112	129	178	205	276	192	152	
Turks & Caicos Islands	2	0	2	5	0	4	2	12			0	0	0							17	
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	
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	25 287	24 361	22 860	21 337	17 314	18 199	17 521	
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	5 554	5 576	5 984	6 273	6 598	
Total	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	166 595	241 965	252 151	244 026	252 432	247 032	233 823	
number reporting	44	96	96	96	96	96	96	96	96	93	93	96	89	72	76	85	80	83	36	78	35
percent reporting	96	96	96	96	96	96	96	96	96	93	93	96	89	72	76	85	80	83	36	78	35

Regional profile for the Americas, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Anguilla	0	0	60	0	0	15	0	0	0	0	0	0	0			26				
Antigua & Barbuda	13	5	0	2	5	3	11	0	5	5	2	0	9				8			5
Argentina	58	59	60	59	55	53	48	43	42	39	38	37	38	41	40	39	38	35	34	31
Bahamas	33	31	25	26	23	27	22	18	21	21	18	20	24	22	28	20	21	31	25	25
Barbados	26	1	12	7	6	5	3	1	2	2	2	2	2	2	28	8	1	2	3	1
Belize	14	22	29	89	22	15	14	24	16	16	30	46	33	40	28	29	24	40		
Bermuda	2	4	9	18	5	5	10	4	2	3	0	5	7			7				
Bolivia	82	93	86	91	72	130	114	146	170	196	170	167	138	122	130	195	134	127	127	121
Brazil	60	70	69	67	67	62	61	58	58	55	50	57	56		48	55	54	51	51	47
British Virgin Is																		15		
Canada	12	10	10	9	9	8	8	7	7	7	7	7	7	7	7	7	6	7	7	5
Cayman Islands	0	11	0	5	5	19	5	0	0	8	8	11	11			9				
Chile	77	65	60	60	55	55	56	50	50	52	47	41	39	33	30	29	28	27	25	23
Colombia	41	40	41	45	41	38	36	35	34	33	36	34	31	30	24	26	25	20	22	27
Costa Rica	17	22	19	19	15	14	15	16	15	11	8	6	4	9	9	9	4	4	17	22
Cuba	12	9	8	8	7	7	6	6	6	6	5	5	4	7	15	15	14	13	12	11
Dominica	27	35	25	22	7	11	49	38	10	18	8	20	18	10	17	11	14	9	7	
Dominican Rep	38	31	41	49	50	37	40	37	45	45	37	25	47	54	56	52	75	69	52	72
Ecuador	50	49	46	46	49	53	61	61	56	55	80	66	68	64	86	69	54	80	75	50
El Salvador	49	45	46	44	33	31	34	34	48	12	46	44	47	62	70	43	29	28	28	26
Grenada	19	1	1	7	5	2	1	2	0	4	0	1	3	0	3	2		4		
Guatemala	83	95	101	82	87	85	61	70	69	57	44	29	27	26	26	57	34	30	26	28
Guyana	16	15	17	19	19	27	24	15	19	15	21	17	23	11	32	36	38	48	37	
Haiti	152	118	59	117	97	81	137	132	122	120		145					86	129	124	113
Honduras	47	46	45	49	52	81	98	95	86	85	75	91	80	70	78	88	72	67	80	72
Jamaica	8	8	7	7	7	6	4	6	3	4	5	5	5	5	4	4	5	5	5	5
Mexico	46	47	35	32	20	20	17	19	19	19	17	18	17	17	18	12	12	25	18	16
Montserrat	9	0	0	9	62	80	45	117	54	46	9	9	0						28	9
Netherlands Antilles																				
Nicaragua	45	123	99	86	82	77	75	84	75	83	77	71	71	67	64	64	66	60	54	52
Panama	33	29	29	21	20	28	32	34	33	29	35	35	30	45	32	50	41	39	53	51
Paraguay	44	43	43	53	49	54	44	39	36	55	51	53	43	45	39	48	43	39	36	40
Peru	92	123	119	122	120	125	124	150	178	169	176	185	235	227	210	193	174	173	176	160
Puerto Rico	22	16	14	14	13	10	11	9	8	9	5	7	7	7	7	7	6	6	5	5
Saint Kitts & Nevis	16	9	14	5	7	0	0	0	0	0	0	2	10	15	5	10	8	13	8	8
Saint Lucia	36	33	31	40	45	17	27	20	25	21	10	18	19		17	8		10	14	11
St Vincent & Grenadines	80	11	14	4	23	14	9	3	6	3	2	1	4	12	0	22			4	
Suriname	22	23	15	21	20	13	15	20	19	18	20	12	14				13	17		22
Trinidad and Tobago	7	7	6	10	9	10	10	10	9	10	10	12	12	9	10	14	16	22	15	12
Turks & Caicos Islands	27	0	25	59	0	43	21	118			0	0	0	22	21	19	22	22	20	105
Uruguay	64	58	49	46	47	40	36	34	31	32	29	24	22	22	21	19	22	22	20	19
US Virgin Islands	0	1	1	2	3	1	1	2	6	4	4	4			10	4	8			
USA	12	12	11	10	9	9	9	9	9	9	10	10	10	10	9	9	8	6	7	6
Venezuela	28	26	26	26	28	28	28	27	25	24	28	26	27	25	23	25	25	26	27	28
Total	37	40	37	37	35	34	33	34	35	34	32	34	34	22	32	32	31	31	31	29

Notes

Argentina Treatment outcomes reported under DOTS were, in fact, a combination of DOTS and non-DOTS treatment outcomes.

Chile Cases listed as “other retreatment” were cases given 2nd line drugs.

Colombia Information system did not allow distinction between relapses and retreatment cases. New smear-positive cases were notified by age but not by sex.

Panama Age/sex data were for all cases (not just smear-positive cases).

Puerto Rico Notifications included all cases with previous history of TB (not just relapses). Age/sex data were not available at national level.

Saint Kitts and Nevis Age/sex data were for all cases (not just smear-positives).

United States of America (the) Notifications excluded 10 cases with site of disease not stated or unknown. Information on relapses and other retreatment cases were not collected at national level.

EASTERN MEDITERRANEAN

The Eastern Mediterranean: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Afghanistan						3	
Bahrain						4	x
Cyprus						4	
Djibouti						4	
Egypt						3	
Iran (Islamic Republic of)						4	
Iraq						3	
Jordan						4	
Kuwait						0	
Lebanon						4	
Libyan Arab Jamahiriya (the)						4	x
Morocco						4	
Oman						4	
Pakistan						2	
Qatar						4	
Saudi Arabia						3	x
Somalia						3	
Sudan (the)						3	
Syrian Arab Republic (the)						3	
Tunisia						4	x
United Arab Emirates (the)						0	
West Bank and Gaza						0	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional profile for the Eastern Mediterranean, cont'd: age and sex distribution of smear-positive cases in DOTS areas, 1999 (absolute numbers)

	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	8	55	47	34	21	8	8	25	139	160	110	50	25	8	33	194	215	157	84	46	16
Bahrain	0	12	19	14	13	5	3	0	6	11	6	0	1	3	0	18	30	20	13	6	6
Cyprus	5	1	6	2	2	0	0	4	1	2	3	1	2	0	9	2	8	5	3	12	0
Djibouti	25	348	371	159	87	67	22	20	158	168	84	38	20	3	45	506	539	243	125	87	25
Egypt	22	442	539	441	284	192	108	20	310	207	154	126	69	29	42	752	746	595	410	261	137
Iran	27	370	460	383	260	335	591	51	551	360	277	279	396	637	78	921	820	660	539	731	1228
Iraq	24	153	154	93	45	31	15	22	89	80	47	28	14	8	46	242	234	140	73	45	23
Jordan	0	16	19	16	10	8	2	0	8	7	2	2	7	5	0	24	26	18	12	15	7
Kuwait																					
Lebanon	3	27	44	35	17	17	11	1	33	26	17	6	9	3	4	60	70	52	23	26	14
Libyan Arab Jamahiriya	2	110	257	115	53	36	33	6	43	59	25	15	14	27	8	153	316	140	68	50	60
Morocco	78	2 296	2 696	1 641	815	559	562	156	1 654	1 143	691	446	351	332	234	3 950	3 839	2 332	1 261	910	894
Oman	2	10	6	10	4	6	10	3	14	2	5	1	4	8	5	24	8	15	5	10	18
Pakistan	49	229	178	65	211	162	113	33	259	373	97	146	243	114	82	488	551	162	357	405	227
Qatar	0	5	15	12	12	3	2	0	2	3	3	1	0	0	0	7	18	15	13	3	2
Saudi Arabia	2	88	168	123	80	49	63	23	107	93	55	33	32	36	25	195	261	178	113	81	99
Somalia	136	643	678	383	175	175	124	131	302	302	190	100	74	74	267	945	980	573	275	249	198
Sudan	513	618	1 012	821	669	490	413	495	602	593	720	523	364	332	1 008	1 220	1 605	1 541	1 192	854	745
Syrian Arab Republic																					
Tunisia	18	137	221	181	106	88	129	15	80	76	62	40	29	53	33	217	297	243	146	117	182
United Arab Emirates																					
West Bank and Gaza																					
Yemen																					
Regional total	914	5 560	6 898	4 541	2 877	2 254	2 209	1 005	4 358	3 665	2 548	1 835	1 654	1 672	1 919	9 918	10 563	7 089	4 712	3 908	3 881

Regional profile for the Eastern Mediterranean, cont'd: age and sex distribution of smear-positive cases in non-DOTS areas, 1999 (absolute numbers)

	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																						
Bahrain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprus																						
Djibouti	9	266	350	250	174	96	62	37	175	140	94	67	43	7	46	441	490	344	241	139	69	
Egypt																						
Iran	495	1 281	1 092	988	659	601	361	487	1 119	898	777	543	513	194	982	2 400	1 990	1 765	1 202	1 114	555	
Iraq																						
Jordan																						
Kuwait																						
Lebanon																						
Libyan Arab Jamahiriya																						
Morocco																						
Oman	0	0	5	13	11	1	0	0	2	2	1	0	0	0	0	2	7	14	11	1	0	
Pakistan																						
Qatar																						
Saudi Arabia	3	67	146	122	72	54	80	16	75	108	39	41	41	44	19	142	254	161	113	95	124	
Somalia																						
Sudan	329	482	444	449	309	351	426	408	433	518	384	294	230	283	737	915	962	833	603	581	709	
Syrian Arab Republic																						
Tunisia																						
United Arab Emirates																						
West Bank & Gaza																						
Yemen																						
Regional total	836	2 096	2 037	1 822	1 225	1 103	929	948	1 804	1 666	1 295	945	827	528	1 784	3 900	3 703	3 117	2 170	1 930	1 457	

Regional profile for the Eastern Mediterranean, cont'd: smear-positive notification rates by age and sex, 1999

	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	0.2	2.8	3.2	4.4	4.5	4.1	2.6	0.5	7.5	9.7	11.0	7.1	5.1	2.4	0.3	5.0	6.4	7.6	5.7	4.6	2.5
Bahrain	0.0	12.3	18.7	8.6	13.8	16.3	16.2	0.0	6.5	13.7	6.7	0.0	4.8	17.8	0.0	9.5	16.5	7.9	9.5	11.6	17.0
Cyprus	5.2	1.6	10.9	3.5	4.2	29.1	0.0	4.5	1.7	3.8	5.4	2.1	5.5	0.0	4.9	1.7	7.4	4.5	3.1	17.0	0.0
Djibouti	19.1	577.6	875.0	541.2	405.6	465.2	235.7	15.4	256.5	365.1	260.7	162.2	124.3	26.0	17.2	415.3	609.6	394.5	278.6	285.3	119.9
Egypt	0.1	5.1	8.7	8.2	8.3	9.5	7.1	0.2	3.7	3.6	3.1	3.4	3.4	1.2	0.2	4.5	6.2	5.7	5.8	6.3	3.8
Iran	0.2	4.9	9.1	10.9	12.3	24.8	40.4	0.4	7.6	7.2	7.9	12.9	29.7	44.7	0.3	6.2	8.2	9.4	12.6	27.2	42.5
Iraq	5.4	31.1	36.7	47.8	47.5	71.2	58.1	5.6	27.6	29.9	37.9	39.6	58.3	27.1	5.5	29.4	33.4	43.0	43.6	64.7	41.5
Jordan	0.0	2.3	3.3	5.3	5.9	6.5	2.2	0.0	1.2	1.4	0.7	1.2	5.8	5.2	0.0	1.8	2.4	3.1	3.5	6.1	3.8
Kuwait																					
Lebanon	0.6	9.0	14.7	20.9	15.8	22.8	12.9	0.2	11.1	8.8	7.8	4.7	10.2	3.0	0.4	10.0	11.7	13.5	9.8	16.0	7.5
Libyan Arab Jamahiriya	0.2	17.9	62.1	41.9	23.5	25.0	37.2	0.6	7.2	14.8	9.9	8.4	13.3	33.0	0.4	12.6	38.9	26.6	16.8	20.1	35.2
Morocco	1.7	75.5	113.6	96.9	79.9	96.6	100.6	3.5	56.4	49.8	39.7	42.3	48.1	50.9	2.5	66.1	82.2	67.9	60.7	69.5	73.8
Oman	0.2	2.1	3.3	8.2	6.0	6.5	16.5	0.3	3.5	1.4	3.1	0.8	4.5	13.1	0.2	2.8	2.4	6.1	4.2	5.6	14.8
Pakistan	0.1	1.5	1.5	0.8	4.0	5.4	4.7	0.1	1.9	3.5	1.2	3.1	8.3	4.7	0.1	1.7	2.5	1.0	3.6	6.8	4.7
Qatar	0.0	12.6	37.0	11.3	14.7	10.1	24.5	0.0	5.3	12.9	9.9	4.0	0.0	0.0	0.0	9.1	28.2	11.0	12.2	8.0	17.0
Saudi Arabia	0.1	3.8	10.9	6.9	6.4	10.5	23.7	0.5	4.7	8.4	5.9	6.6	10.2	13.6	0.3	4.2	9.7	6.6	6.4	10.4	18.7
Somalia	5.9	69.0	110.4	93.4	67.3	114.0	115.5	5.7	32.2	48.0	44.6	36.3	43.1	58.5	5.8	50.6	78.8	68.6	51.4	76.6	84.7
Sudan	7.2	18.6	34.7	42.4	49.4	66.3	95.0	7.9	17.5	27.1	36.5	38.9	43.4	65.4	7.6	18.0	30.9	39.5	44.0	54.4	79.7
Syrian Arab Republic																					
Tunisia	1.2	13.6	28.6	29.9	29.0	35.5	47.0	1.1	8.3	9.7	10.2	10.8	11.3	19.5	1.1	11.0	19.1	20.1	19.8	23.2	33.3
United Arab Emirates																					
West Bank and Gaza																					
Yemen																					
Regional rate	1.5	12.7	19.9	18.5	18.5	26.7	31.3	1.7	10.8	12.7	12.4	13.6	19.5	20.0	1.6	11.8	16.4	15.6	16.2	23.1	25.4

Regional profile for the Eastern Mediterranean, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
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	140	114		115	156	1 290	3 084	3 314
Bahrain	219	262	156	232	208	194	156	120	142	122	117	142	142	37		36	24	154	213	200
Cyprus	69	69	86	73	39	61	48	35	39	23	29	43	39	37				47	47	39
Djibouti		2 265	671		1 489	2 262	1 864	1 978	2 030	2 040	2 100	2 900	2 884			3 071	3 727	3 715	4 366	
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	34 941	12 338	13 971	12 662	11 763
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	29 491	14 189	12 659	11 794	12 062
Iraq	11 809	10 614	7 741	6 970	6 807	6 485	6 846	6 517	6 504	8 032	14 684	390	504	18 553	19 733	26 950	29 196	26 607	30 324	31 899
Jordan	298	646	860	856	672	769	592	537	553	484	439	390	504	427	443	504	474	407	385	379
Kuwait	847	819	880	855	812	717	611	540	480	468	277	330	282	217	237	336	400	528	564	
Lebanon		67		75	284	1 943	2 257	2 478		265	442	884	884		940	983	836	701	730	679
Libya	718	481	512	610	357	325	276	331	416		442	239	1 164		1 440	1 282	1 440	1 575	1 575	1 615
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
Oman	1 872	928	897	802	843	861	1 265	616	477	478	482	442	367	281	304	276	222	235	215	255
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	73 175		13 142	4 307	89 599	20 936	20 936
Qatar	257	213	172	206	203	250	220	248	223	191	184	195		200		304	257	212	253	259
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					3 138	3 235	3 507
Somalia				2 838	2 719	2 722	3 079	7 322	2 728	1 323	212	16 423	19 503			2 023	3 251	4 116	4 071	4 784
Sudan	32 971	47 431				1 509	2 460	800	693	701					23 178	11 064	20 280	11 666	22 762	23 121
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	37 516	5 127	4 404	5 200	4 951	5 342	5 447
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	2 363	2 387	2 211	2 211	2 158
United Arab Emirates	522	638	597	507	534	568	464	818	339	308	285	234	227				507	773		
West Bank and Gaza	191	139	136	136	123	113	63	82	85	145	64	89	97			77	40		18	
Yemen																14 428	14 364	12 013	12 383	
Total	522 179	514 860	433 357	234 555	171 691	186 405	230 475	288 840	271 839	250 271	229 948	295 155	84 108	184 706	101 646	173 606	144 552	126 649	235 042	156 637
number reporting	19	21	20	20	21	22	22	22	21	21	20	20	17	13	13	19	21	18	23	19
percent reporting	83	91	87	87	91	96	96	96	91	91	87	87	74	57	57	83	91	78	100	83

Regional profile for the Eastern Mediterranean, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Afghanistan	446	451	269	346	127	74	100	128	114	101	29	149	27	21	5	21	27	6	14	15
Bahrain	63	73	42	60	52	47	36	27	31	26	24	28	27	5	5	21	27	26	36	33
Cyprus	11	11	14	12	6	9	7	5	6	3	4	6	6	5	5	5	3	6	6	5
Djibouti		753	209		406	578	448	447	433	413	406	539	518				504	604	597	694
Egypt	4	3	4	4	3	3	2	42	3	3	4	6	15	6	6	56	19	22	19	18
Iran	109	29	22	20	23	18	16	20	19	22	16	25	24	34	21	47	22	20	18	18
Iraq	91	79	56	49	46	42	43	40	38	46	81	8	10	96	100	134	142	126	139	142
Jordan	10	21	26	23	17	19	14	12	13	11	10	8	10	8	8	9	8	7	6	6
Kuwait	62	57	59	55	50	42	34	28	23	22	13	16	14	12	14	20	24	31	31	21
Lebanon		3	3	11	15	73	86	95				34	33		32	33	27	22	23	21
Libya	24	15	15	18	10	9	7	8	10	6	10	5	25			29	25	30	30	30
Morocco	128	145	139	130	105	124	125	120	112	114	116	114	103	110	119	115	120	112	106	107
Oman	166	78	72	62	62	60	85	39	29	28	27	24	19	14	15	13	10	10	9	10
Pakistan	371	369	358	125	94	110	142	166	174	148	132	159	159	57	15	10	3	3	61	14
Qatar	112	85	63	68	62	70	57	60	51	41	38	39	39	38		56	46	37	44	44
Saudi Arabia	114	81	79	67	60	31	28	22	17	17	15	13	12					16	16	17
Somalia			45	45	43	42	46	104	37	17						25	38	47	44	50
Sudan	177	247				7	11	4	3	3	1	67	78	147	89	42	75	42	81	80
Syrian Arab Republic	19	21	20	19	21	21	37	38	43	46	49	44	41		37	31	36	33	35	35
Tunisia	39	35	38	44	35	34	33	30	30	30	25	25	26	30	27	27	26	24	24	23
United Arab Emirates	51	57	48	38	37	37	28	48	19	17	15	12	11			22	22	33	33	
West Bank and Gaza	42	30	28	28	24	21	12	15	15	24	10	13	13			9	4	74	2	
Yemen																96	92		73	
Total	181	173	141	74	53	56	67	81	74	66	59	74	21	44	24	39	32	27	50	32

Regional profile for the Eastern Mediterranean, cont'd: new smear-positive cases, 1993-99

Country/territory	Number of cases										Rate (per 100 000 population)										
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999
Afghanistan					618	1 833	1 669												3	9	8
Bahrain	82		16	121	110	110	93	15										21	19	19	15
Cyprus			12	3	19	6	20											0	2	1	3
Djibouti				1 796	1 905	1 697	1 570											294	309	273	250
Egypt		1 811	8 803	5 084	5 469	4 915	5 094											8	8	7	8
Iran		4 615	9 324	5 373	5 253	5 105	5 426											8	8	8	8
Iraq	5 240	5 781	11 553	10 240	8 001	8 850	10 711	27										50	38	41	48
Jordan	173	161	187	170	126	110	102	3										3	2	2	2
Kuwait	148	155	175	153	201	185	102	8										9	12	10	8
Lebanon		148	197	198	206	245	249											6	7	8	8
Libyan Arab Jamahiriya				515			803											10			15
Morocco			14 171	14 278	14 134	13 426	13 420											54	53	49	48
Oman	123	135	135	108	120	109	120	6										5	5	5	5
Pakistan	11 020		2 578	1 849		14 974	6 248	9										1	10	4	4
Qatar			59	43	39	68	57											8	7	12	10
Saudi Arabia					1 568	1 644	1 786												8	8	9
Somalia		1 168	1 739	2 318	3 097	3 121	3 449											27	35	34	36
Sudan		3 728	6 280	8 978	6 095	10 791	13 505											33	22	38	47
Syrian Arab Republic			1 295	1 523	1 402	1 593	1 578											10	9	10	10
Tunisia	1 006	983	1 243	1 005		1 196	1 235	12										11	13	13	13
United Arab Emirates																					
West Bank and Gaza			9	24		8												3		1	
Yemen			3 681	4 371	4 717	4 896												28	29	29	
Total	17 792	18 685	61 457	58 150	53 080	74 882	67 135	4	4	14	13	11	16	14	4	14	13	11	16	14	

Notes

Afghanistan Age/sex data for 1999 new smear-positive cases were from 3rd and 4th quarter only.

Bahrain The 73 transferred patients were non Bahraini and were transferred to their own countries to continue their treatment.

Libyan Arab Jamahiriya (the) Respondant noted that the high rate of treatment interruption was during the continuation phase, and was related to foreign patients leaving the country.

Saudi Arabia Age/sex data included all smear-positive cases (new and relapse).

EUROPE

Updated information will be available later in 2001 from:

WHO Collaborating Centre for the Surveillance of Tuberculosis in Europe, InVS
Hôpital National de Saint-Maurice
12 rue de Val d'Osne, 94410 Saint-Maurice, France

Europe: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Albania						1	
Andorra						4	
Armenia						3	
Austria						1	
Azerbaijan						3	
Belarus						1	
Belgium						1	
Bosnia and Herzegovina						4	
Bulgaria						1	
Croatia						1	
Czech Republic (the)						4	
Denmark						1	
Estonia						1	
Finland						1	
France						1	
Georgia						4	
Germany						1	
Greece						1	
Hungary						4	x
Iceland						5	
Ireland						1	
Israel						4	
Italy						3	
Kazakhstan						4	
Kyrgyzstan						4	
Latvia						4	
Lithuania						2	x
Luxembourg						1	
Malta						4	
Monaco						4	x
Netherlands (the)						4	
Norway						4	
Poland						3	
Portugal						4	
Republic of Moldova (the)						1	
Romania						2	
Russian Federation (the)						2	
San Marino						4	
Slovakia						4	
Slovenia						4	
Spain						1	
Sweden						5	
Switzerland						5	
Tajikistan						2	x
The former Yugoslav Republic of Macedonia						4	
Turkey						1	

continued page 133)

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

European Region: Summary of TB control policies (continued)

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Turkmenistan						1	
Ukraine						1	
United Kingdom of Great Britain and Northern Ireland (the)						1	
Uzbekistan						2	
Yugoslavia						1	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional profile for Europe, cont'd: age and sex distribution of smear-positive cases in DOTS areas, 1999 (absolute numbers)

	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	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0
Andorra	3	105	49	73	51	29	4	4	15	12	18	5	9	4	7	120	61	91	56	38	8
Armenia	0	95	27	24	21	3	0	0	3	3	3	6	3	0	0	98	30	27	27	6	0
Austria	2	18	40	49	46	38	83	4	20	38	19	22	8	16	6	38	78	68	68	46	99
Belarus	2	44	76	113	89	60	68	6	49	59	34	24	38	87	8	93	135	147	113	98	155
Belgium	2	13	27	62	98	45	75	1	5	14	18	15	3	71	3	18	41	80	113	48	146
Bosnia & Herzegovina																					
Bulgaria																					
Croatia																					
Czech Republic																					
Denmark																					
Estonia																					
Finland																					
France	5	135	176	151	77	55	23	3	27	40	26	10	10	8	8	162	216	177	87	65	31
Germany																					
Greece	2	16	48	155	183	74	47	4	17	19	37	19	7	32	6	33	67	192	202	81	79
Hungary																					
Iceland																					
Ireland																					
Israel	2	13	22	22	16	10	27	3	4	15	7	2	5	22	5	17	37	29	18	15	49
Italy	7	78	155	137	114	104	247	8	49	63	63	35	32	141	15	127	218	200	149	136	388
Kazakhstan	34	778	1 217	1 026	560	368	165	60	822	872	452	226	171	136	94	1 600	2 089	1 478	786	539	3 011
Kyrgyzstan	5	216	388	244	142	73	48	8	137	199	75	40	31	35	13	353	587	319	182	104	84
Latvia	1	48	87	110	103	57	30	2	28	24	40	29	11	18	3	76	111	150	132	68	48
Lithuania	0	0	4	5	3	3	9	0	2	1	1	0	0	2	0	2	5	6	3	3	11
Luxembourg																					
Malta	0	0	1	0	0	5	3	0	0	0	0	0	0	0	0	0	1	0	0	5	3
Monaco																					
Netherlands	5	44	67	32	24	12	19	5	26	39	16	2	1	16	10	70	106	48	26	13	35
Norway	0	2	5	3	2	1	1	0	3	2	2	0	0	0	0	5	7	5	2	1	1
Poland	0	2	14	42	39	7	18	0	2	6	15	14	4	11	0	4	20	57	53	11	29
Portugal	13	113	288	378	232	146	189	9	98	134	86	30	28	57	22	211	422	464	262	174	246
Republic of Moldova																					
Romania	1	60	94	103	77	33	10	4	39	32	25	14	12	14	5	99	126	128	91	45	24
Russian Federation	0	82	149	199	180	75	31	0	38	49	36	33	7	22	0	120	198	235	213	82	53
San Marino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovakia	1	2	19	42	51	19	29	0	8	10	7	7	8	43	1	10	29	49	58	27	72
Slovenia	0	3	21	40	27	11	15	0	0	5	6	5	6	20	0	3	26	46	32	17	35
Spain																					
Sweden																					
Switzerland																					
Tajikistan																					
TFYR Macedonia																					
Turkey																					
Turkmenistan																					
Ukraine	11	661	1 463	2 351	1 825	1 067	557	25	485	577	478	297	222	393	36	1 146	2 040	2 829	2 122	1 289	950
United Kingdom	4	10	25	50	7	3	3	1	8	20	40	5	3	2	5	18	45	90	12	6	5
Uzbekistan																					
Yugoslavia																					
Regional total	100	2 538	4 462	5 412	3 968	2 298	1 702	147	1 885	2 233	1 505	840	619	1 150	247	4 423	6 695	6 917	4 808	2 917	2 852

Regional profile for Europe, cont'd: age and sex distribution of smear-positive cases in non-DOTS areas, 1999 (absolute numbers)

	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	0	13	23	25	19	15	15	0	5	13	11	5	8	16	0	18	36	36	24	23	31
Andorra																						
Armenia	1	46	39	42	25	8	16	2	7	3	2	1	0	3	3	53	42	44	26	8	19	
Austria	0	13	40	54	52	37	49	0	10	16	18	6	2	26	0	23	56	72	58	39	75	
Azerbaijan	0	1	19	193	163	46	0	0	1	14	70	52	16	0	0	2	33	263	215	62	0	
Belarus																						
Belgium																						
Bosnia & Herzegovina																						
Bulgaria	1	29	45	83	93	46	45	2	14	18	15	15	16	53	3	43	63	98	108	62	98	
Croatia																						
Czech Republic	4	9	29	23	21	8	9	1	11	18	11	7	8	11	5	20	47	34	28	16	20	
Denmark	0	14	35	72	55	19	17	0	8	9	20	16	2	7	0	22	44	92	71	21	24	
Estonia	0	0	4	13	26	20	53	0	2	6	11	5	39	0	0	2	10	13	37	25	92	
Finland	13	147	267	310	276	157	318	25	110	145	120	80	60	284	38	257	412	430	356	217	602	
Georgia																						
Germany	13	145	308	419	362	335	449	15	118	177	98	85	99	295	28	263	485	517	447	434	744	
Greece	3	11	11	17	18	18	27	1	5	8	8	2	3	10	4	16	19	25	20	21	37	
Hungary																						
Iceland	0	7	15	10	12	7	19	0	9	9	3	8	3	13	0	16	24	13	20	10	32	
Ireland																						
Israel																						
Italy																						
Kazakhstan																						
Kyrgyzstan																						
Latvia																						
Lithuania	0	42	86	148	19	88	58	0	30	47	54	25	20	38	0	72	133	202	44	108	96	
Luxembourg																						
Malta																						
Monaco	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	
Netherlands																						
Norway																						
Poland	0	82	205	639	615	298	288	10	93	107	163	115	77	311	10	175	312	802	730	375	599	
Portugal																						
Republic of Moldova	1	89	123	144	84	29	14	3	31	32	27	19	7	6	4	120	155	171	103	36	20	
Romania	33	782	1 430	1 940	1 576	885	462	44	693	677	471	304	186	303	77	1 475	2 107	2 411	1 880	1 071	765	
Russian Federation	17	1 776	3 989	4 838	3 812	1 543	828	33	723	973	953	567	306	485	50	2 499	4 962	5 791	4 379	1 849	1 313	
San Marino																						
Slovakia																						
Slovenia																						
Spain	0	13	18	12	5	2	22	1	7	14	7	3	2	10	1	20	32	19	8	4	32	
Sweden																						
Switzerland	1	12	15	17	6	6	5	0	5	16	7	0	2	6	1	17	31	24	6	8	11	
Tajikistan																						
TFYR Macedonia	1	11	10	19	27	15	5	1	7	9	5	1	10	1	2	18	19	24	28	25	6	
Turkey																						
Turkmenistan	5	129	225	174	77	43	17	2	51	103	65	32	27	14	7	180	328	239	109	70	31	
Ukraine																						
United Kingdom	8	68	93	68	53	51	126	6	55	80	60	29	30	69	14	123	173	128	82	81	195	
Uzbekistan	0	419	901	469	255	143	97	10	338	627	299	181	133	122	10	757	1 528	768	436	276	219	
Yugoslavia																						
Regional total	101	3 858	7 930	9 730	7 652	3 819	2 939	156	2 333	3 122	2 487	1 564	1 022	2 123	257	6 191	11 052	12 217	9 216	4 841	5 062	

Regional profile for Europe, cont'd: smear-positive notification rates by age and sex, 1999

	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	0.0	4.6	8.7	10.8	13.8	13.7	18.6	0.0	1.9	5.2	5.0	3.9	7.8	15.3	0.0	3.3	7.0	8.0	9.0	10.9	16.7
Andorra	0.4	24.3	17.0	20.1	23.7	15.2	8.4	0.7	3.6	2.9	3.2	1.7	3.1	2.0	0.6	14.1	10.0	11.3	12.0	8.6	4.6	
Armenia	0.0	2.5	5.8	7.8	10.1	8.6	10.9	0.0	2.1	2.5	2.8	1.2	0.4	3.5	0.0	2.3	4.2	5.4	5.7	4.4	6.3	
Azerbaijan	0.0	6.8	3.5	19.4	33.6	11.1	0.0	0.0	0.3	1.3	5.8	9.5	3.6	0.0	0.0	3.6	2.4	12.2	20.9	7.0	0.0	
Belarus	0.2	2.9	5.4	6.0	6.5	7.5	12.3	0.5	3.3	5.4	2.4	3.2	1.5	1.6	0.3	3.1	5.4	4.3	4.8	4.4	5.9	
Belgium	0.5	14.9	24.0	33.0	36.7	35.9	45.3	1.7	17.6	19.4	10.1	9.7	19.5	40.4	1.1	16.2	21.7	21.6	23.1	27.1	42.4	
Bosnia & Herzegovina																						
Bulgaria	0.3	9.0	14.7	24.9	29.3	19.0	18.5	0.5	4.5	6.0	4.5	4.7	5.9	13.1	0.4	6.8	10.4	14.7	16.9	12.1	15.2	
Croatia	0.2	1.6	3.6	8.7	12.4	9.1	14.1	0.1	0.6	1.9	2.6	1.9	0.5	8.3	0.2	1.1	2.8	5.7	7.1	4.6	10.5	
Czech Republic	0.8	2.9	7.2	5.8	5.3	2.7	2.7	0.2	3.7	4.7	2.9	1.8	2.7	2.3	0.5	3.3	6.0	4.4	3.6	2.7	2.5	
Denmark																						
Estonia	0.0	13.2	34.8	67.5	61.9	27.8	26.9	0.0	7.8	9.6	18.3	16.0	2.3	5.4	0.0	10.5	22.6	42.6	37.6	13.4	12.5	
Finland	0.0	1.2	3.3	6.2	7.6	18.4	0.0	0.6	1.8	2.0	1.8	2.7	1.8	8.2	0.0	0.3	1.5	1.7	4.5	4.6	12.1	
France	0.2	3.7	6.2	7.3	6.8	5.9	8.5	0.5	2.9	3.4	2.8	2.0	2.1	5.1	0.3	3.3	4.8	5.0	4.4	4.0	6.5	
Georgia	0.9	35.0	49.4	41.7	30.3	24.6	9.8	0.5	7.2	11.5	6.5	3.5	3.6	2.1	0.7	21.3	30.7	23.3	16.1	13.1	5.0	
Germany	0.2	3.1	4.8	6.1	6.9	6.2	9.0	0.2	2.7	2.9	1.5	1.7	1.8	3.6	0.2	2.9	3.9	3.9	4.3	4.0	5.6	
Greece	0.4	1.4	1.4	2.3	2.7	3.1	3.3	0.1	0.7	1.0	1.1	0.3	0.5	1.0	0.2	1.1	1.2	1.7	1.5	1.7	2.0	
Hungary	0.2	2.1	6.6	22.7	26.0	15.2	8.5	0.5	2.3	2.7	5.4	2.5	1.1	3.5	0.3	2.2	4.7	14.0	13.8	7.4	5.4	
Iceland	0.0	0.0	4.7	4.7	4.7	4.7	4.7	0.0	4.8	4.8	4.8	4.8	4.8	4.8	0.0	2.4	2.4	2.4	2.4	2.4	2.4	
Ireland	0.0	2.1	5.5	4.0	5.3	4.4	10.6	0.0	2.8	3.3	1.2	3.6	1.9	5.4	0.0	2.4	4.4	2.5	4.4	3.2	7.6	
Israel	0.2	2.4	4.9	5.7	4.8	5.2	10.7	0.4	0.8	3.4	1.8	0.6	2.3	6.4	0.3	1.6	4.2	3.7	2.7	3.7	8.2	
Italy	0.2	2.3	3.4	3.1	3.0	3.2	5.9	0.2	1.5	1.4	1.5	0.9	0.9	2.3	0.2	1.9	2.4	2.3	1.9	2.0	3.8	
Kazakhstan	1.5	53.3	100.1	83.5	72.8	69.4	43.1	2.7	57.2	75.3	35.7	26.8	26.0	18.2	2.1	55.2	88.0	59.2	48.8	45.3	26.6	
Kyrgyzstan	0.6	49.0	113.2	82.7	87.7	66.9	47.9	1.0	31.4	58.8	24.2	22.8	24.6	20.1	0.8	40.3	86.1	52.8	54.0	44.2	30.4	
Latvia	0.5	29.0	52.4	62.6	75.3	48.2	28.8	0.9	16.5	14.3	21.0	17.8	6.8	7.8	0.7	22.7	33.3	41.0	44.0	24.2	14.3	
Lithuania	0.0	7.8	16.4	26.9	5.4	27.0	20.4	0.0	6.1	9.1	9.5	5.4	4.5	6.3	0.0	6.9	12.8	18.1	5.4	14.3	11.1	
Luxembourg																						
Malta	0.0	0.0	3.8	0.0	0.0	29.2	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	13.8	6.7	
Monaco																						
Netherlands	0.3	4.6	5.3	2.5	2.1	1.5	2.2	0.4	2.9	3.2	1.3	0.2	0.1	1.3	0.3	3.8	4.2	1.9	1.1	0.8	1.6	
Norway	0.0	0.7	1.5	0.9	0.6	0.5	0.3	0.0	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.9	1.0	0.8	0.3	0.2	0.1	
Poland	0.0	1.3	4.2	11.3	12.4	9.9	8.9	0.1	1.5	2.2	3.0	2.3	2.2	5.6	0.1	1.4	3.2	7.2	7.3	5.8	6.9	
Portugal	1.6	15.1	36.9	55.8	38.9	30.1	30.4	1.1	13.6	17.3	12.1	4.6	5.0	6.2	1.3	14.3	27.1	33.5	21.1	16.6	16.0	
Republic of Moldova	0.2	23.6	41.8	44.1	34.7	18.0	8.8	0.6	8.4	10.7	7.6	7.0	3.4	2.3	0.4	16.1	26.2	25.0	20.0	9.7	4.7	
Romania	0.8	23.1	41.0	67.9	59.1	42.2	19.2	1.2	20.9	19.8	16.8	11.0	7.9	9.4	1.0	22.0	30.6	42.6	34.7	23.9	13.6	
Russian Federation	0.1	8.2	20.6	20.7	21.8	12.8	7.6	0.1	3.4	5.2	3.9	2.9	1.8	2.0	0.1	5.8	12.9	12.2	11.8	6.5	3.8	
San Marino																						
Slovakia	0.2	0.4	4.8	10.2	14.6	9.2	12.4	0.0	1.8	2.6	1.7	1.9	3.2	11.5	0.1	1.1	3.7	6.0	8.1	5.9	11.9	
Slovenia	0.0	2.0	14.3	25.4	18.9	10.7	15.3	0.0	0.0	3.4	3.9	3.6	5.4	11.7	0.0	1.0	8.9	14.7	11.4	7.9	13.0	
Spain																						
Sweden	0.0	2.5	2.9	2.0	0.8	0.4	3.3	0.1	1.4	2.4	1.2	0.5	0.4	1.1	0.1	2.0	2.6	1.6	0.6	0.4	2.1	
Switzerland	0.2	2.8	2.6	2.7	1.2	1.6	1.1	0.0	1.2	2.9	1.2	0.0	0.5	0.9	0.1	2.0	2.7	2.0	0.6	1.0	1.0	
Tajikistan																						
TFYR Macedonia	0.4	6.6	6.6	12.9	22.7	16.8	5.6	0.4	4.4	6.1	3.5	0.8	10.3	0.9	0.4	5.5	6.3	8.3	11.6	13.5	3.0	
Turkey																						
Turkmenistan	0.6	30.4	66.8	65.6	56.7	49.8	23.6	0.2	12.2	31.0	23.0	21.9	28.3	12.4	0.4	21.3	49.0	43.6	38.6	38.5	16.7	
Ukraine	0.2	17.6	42.2	63.0	61.6	40.9	23.8	0.6	13.3	16.7	12.2	8.8	6.5	8.3	0.4	15.5	29.5	37.0	33.5	21.4	13.4	
United Kingdom	0.1	1.8	2.2	1.6	1.3	1.7	3.2	0.1	1.6	1.9	1.4	0.7	1.0	1.3	0.1	1.7	2.1	1.5	1.0	1.3	2.1	
Uzbekistan	0.0	9.1	25.9	17.7	18.0	14.7	11.6	0.1	7.5	17.9	11.3	12.2	12.7	9.5	0.1	8.3	21.8	14.4	15.0	13.7	10.4	
Yugoslavia																						
Regional rate	0.2	8.8	17.4	20.2	19.3	13.6	9.8	0.3	6.0	7.7	5.3	3.8	3.1	4.1	0.3	7.4	12.6	12.7	11.3	8.0	6.2	

Regional profile for Europe, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Albania	1 050	954	978	891	975	916	989	915	759	695	653	628	21	590	707	641	738	655	694	733
Andorra										12	23	24					17	19	8	
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
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
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	3 036	3 036	2 839	2 480	2 480	4 635	4 672	4 654
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
Belgium	2 687	2 837	2 652	2 190	2 149	1 956	1 893	1 772	1 588	1 648	1 577	1 452	1 335	1 503	1 521	1 380	1 348	1 263	1 203	1 124
Bosnia & Herzegovina	4 421	4 376	4 678	4 468	4 691	4 666	4 605	4 522	4 073	4 176	4 073	3 546	6 000	6 800	1 595	2 220	2 132	2 869	2 711	2 923
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	2 296	3 245	3 109	3 437	4 117	3 530
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
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	1 647	1 805	1 605
Denmark	430	394	378	348	302	312	299	322	304	328	350	334	359	411	495	448	484	554	529	587
Estonia	614	560	563	587	546	541	522	446	471	422	332	406	403	532	645	624	521	744	820	732
Finland	2 247	2 204	2 170	1 862	1 791	1 819	1 546	1 419	1 078	970	772	771	700	542	553	661	645	573	629	565
France	17 199	16 459	15 425	13 831	12 302	11 290	10 535	10 241	9 191	9 029	9 030	8 510	8 605	9 551	9 093	8 723	7 656	6 832	6 052	6 052
Georgia	2 098	2 124	2 168	1 881	1 855	1 822	1 833	1 810	1 598	1 609	1 537	1 609	3 741	3 741	1 625	3 522	3 522	8 446	6 302	4 793
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
Greece	5 412	7 334	5 193	3 880	1 956	1 556	1 566	1 193	907	1 068	877	762	920	920	1 152	767	4 403	4 240	3 999	3 532
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
Iceland	25	23	25	24	26	13	13	12	16	18	18	15	16	16	18	12	11	10	17	10
Ireland	1 152	1 018	975	924	837	804	632	581	534	672	624	640	604	604	434	434	434	416	424	455
Israel	249	222	232	222	257	368	239	184	226	160	234	505	345	369	5 816	5 627	4 155	4 596	5 727	4 429
Italy	3 311	3 182	3 860	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
Kazakhstan	14 442	13 876	13 808	13 357	12 423	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
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
Latvia	1 194	1 140	1 077	1 072	1 054	1 223	982	948	838	857	906	943	955	994	1 131	1 541	1 761	2 003	2 182	1 891
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
Luxembourg	71	45	41	41	46	42	45	48	16	45	48	48	25	26	25	11	28	11	16	22
Malta	24	26	13	24	15	11	14	14	12	16	13	26	30	26	18	12	11	10	16	22
Monaco	1	0	0	0	0	1	2	2	1	1	1	0	1	1	0	0	0	0	0	3
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
Norway	499	461	448	396	373	374	343	307	294	255	285	290	288	256	242	236	217	205	244	213
Poland	25 807	24 087	23 685	23 411	22 527	21 650	20 603	19 757	18 537	16 185	16 136	16 486	16 551	16 828	16 653	15 958	15 358	13 967	13 302	12 168
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
Rep 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
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
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
San Marino											1	1					0	1	0	0
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
Slovenia	1 085	939	982	925	896	923	816	792	760	768	722	583	640	646	526	525	563	481	449	423
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	8 347	9 347	8 927	8 393
Sweden	926	875	784	832	754	702	640	545	536	595	557	521	610	616	537	564	497	456	446	479
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
Tajikistan	2 647	2 631	2 628	2 509	2 427	2 485	2 610	2 727	2 474	2 621	2 460	2 116	1 671	1 652	892	2 029	1 647	2 143	2 448	2 563
TFYR Macedonia																				
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	25 455	22 981	20 212	20 212	25 685	25 501	22 088
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	2 751	1 939	2 072	3 438	3 839	4 092
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
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
Uzbekistan	9 163	9 682	8 697	8 817	8 544	8 171	9 427	9 794	10 134	10 134	9 414	9 370	9 370	9 719	14 890	9 866	11 919	13 352	14 558	15 080
Yugoslavia	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
Total	348 852	346 035	324 494	319 147	308 362	298 872	302 554	290 571	277 104	267 209	242 309	231 608	248 480	241 307	242 677	288 083	321 034	353 289	343 774	373 703
number reporting	48	48	48	48	48	48	48	48	48	49	50	48	49	41	40	44	50	51	50	51
percent reporting	94	94	94	94	94	94	94	94	94	96	98	94	96	80	78	86	98	100	98	100

Regional profile for Europe, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Albania	39	35	35	31	34	31	33	29	24	21	20	19	37	16	22	20	23	21	22	24
Andorra																				
Armenia	24	29	24	22	24	23	25	22	19	18	17	21	7	7	21	32	26	29	41	42
Austria	29	27	26	24	23	19	18	18	18	17	20	18	17	16	16	17	17	17	16	13
Azerbaijan	50	51	51	53	53	57	56	54	48	48	37	38	38	41	38	22	33	61	61	60
Belarus	62	64	56	56	51	49	41	39	37	36	30	36	23	40	42	47	54	58	60	71
Belgium	27	29	27	22	22	20	19	18	16	17	16	15	13	15	15	14	13	12	12	11
Bosnia & Herzegovina	113	111	117	111	115	113	110	106	94	96	95	85	15	18	45	62	65	82	74	76
Bulgaria	37	34	34	32	32	29	28	26	27	26	26	30	36	37	62	38	37	41	49	43
Croatia	91	91	84	82	81	81	75	74	66	63	57	48	49	51	49	47	48	46	47	39
Czech Republic	48	42	40	39	35	30	25	21	20	18	19	20	18	19	18	19	19	18	18	16
Denmark	8	8	7	7	6	6	6	6	6	6	7	6	7	8	10	9	9	11	10	11
Estonia	42	38	38	39	36	36	34	29	30	27	21	26	26	35	43	42	36	51	57	52
Finland	47	46	45	39	37	37	31	29	22	20	15	15	14	11	11	13	13	11	12	11
France	32	30	28	25	22	20	19	18	16	16	16	15	15	17	16	15	13	12	13	10
Georgia	41	42	42	36	35	34	34	34	29	30	28	17	39	70	31	68	165	125	96	96
Germany	38	35	33	30	26	26	23	22	21	19	18	17	38	41	41	42	43	42	40	35
Greece	56	75	53	39	20	16	16	12	9	11	9	7	9	6	7	4	4	4	6	4
Hungary	51	50	48	47	42	46	43	39	38	36	35	35	36	38	41	42	43	42	40	35
Iceland	11	10	11	10	11	5	5	5	6	7	7	6	6	7	7	4	4	4	6	4
Ireland	34	30	28	26	24	23	17	16	15	19	18	18	17	18	16	15	12	11	12	12
Israel	6	6	6	5	6	9	6	4	5	4	5	10	7	7	10	10	6	7	11	8
Italy	6	6	7	8	6	7	7	6	6	7	7	7	8	8	10	10	7	8	10	8
Kazakhstan	97	92	90	87	80	78	82	82	82	80	66	65	65	63	63	69	85	98	126	154
Kyrgyzstan	54	56	54	51	51	52	50	50	51	49	52	57	58	54	60	74	89	112	123	137
Latvia	47	45	42	42	41	47	38	36	35	32	34	35	36	38	44	61	70	81	90	79
Lithuania	48	46	43	42	40	41	39	38	36	37	39	41	43	51	57	63	70	79	82	76
Luxembourg	20	12	11	11	13	11	12	13	4	12	13	12	6	6	7	10	10	9	10	9
Malta	7	8	4	7	4	3	4	4	3	5	4	7	7	7	7	3	7	3	4	6
Monaco	4	0	0	0	0	4	7	7	3	3	3	0	3	0	0	0	0	0	0	9
Netherlands	12	12	11	10	10	9	8	8	9	9	9	9	10	10	12	10	11	10	9	9
Norway	12	11	11	10	9	9	8	7	7	6	7	7	7	6	6	5	5	5	6	5
Poland	73	67	65	64	61	58	55	52	49	43	42	43	43	44	43	41	40	36	34	31
Portugal	70	74	74	71	70	70	67	72	64	67	63	61	60	55	57	57	53	52	53	47
Republic of Moldova	69	70	78	69	61	65	71	66	58	52	40	44	42	55	60	67	67	66	60	62
Romania	61	61	61	60	57	56	56	58	61	63	70	67	78	89	94	102	107	106	115	117
Russian Federation	54	53	51	52	52	45	50	48	46	43	34	34	36	43	48	57	75	81	75	91
San Marino											4	4	4	4	4	0	0	4	0	0
Slovakia	50	46	45	44	42	39	39	35	32	29	28	31	33	34	33	29	28	24	24	20
Slovenia	59	51	53	50	48	49	43	42	40	40	38	30	33	33	27	26	28	24	23	21
Spain	13	15	21	24	26	28	36	24	22	21	19	23	25	24	22	21	21	24	23	21
Sweden	11	11	9	10	9	8	8	6	6	7	7	6	7	6	6	6	6	5	5	5
Switzerland	18	19	18	17	15	15	13	15	18	16	19	16	14	13	13	12	11	10	10	10
Tajikistan	67	65	63	58	55	54	55	56	49	51	46	39	30	12	16	35	28	36	41	42
TFYR Macedonia																				
Turkey	83	88	57	60	56	61	60	58	52	48	44	44	44	83	37	40	37	35	31	28
Turkmenistan	59	55	52	50	51	50	49	58	55	61	63	63	54	70	48	50	81	89	93	93
Ukraine	52	51	49	48	48	47	45	43	40	39	32	32	35	39	40	42	46	56	55	65
United Kingdom	19	16	15	14	12	12	12	10	10	11	10	11	11	11	11	11	11	11	11	11
Uzbekistan	57	59	52	51	48	48	51	51	52	53	46	44	44	45	67	44	52	58	62	63
Yugoslavia	65	66	65	66	66	63	62	61	56	50	41	44	37	37	34	26	38	38	28	25
Total	44	43	40	39	38	36	37	35	33	32	29	27	29	28	28	33	37	41	40	43

Regional profile for Europe, cont'd: new smear-positive cases, 1993-99

Country/territory	Number of cases									Rate (per 100 000 population)								
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999				
Albania		250	139	173	241	212	168		8	4	5	8	7	5				
Andorra				8	17	1	3				12	24	1	4				
Armenia		319	436	327	400	475	576		9	12	9	11	13	16				
Austria		662	662	580	370	727	323		7	8	7	5	9	4				
Azerbaijan	499	513	669	981	763	910	763	7	7	9	13	13	9	10				
Belarus	1 493	1 775	1 845	2 117	2 273	5 047	2 769	14	17	18	20	22	49	27				
Belgium	484	427	400	364	434	418	403	5	4	4	4	4	4	4				
Bosnia & Herzegovina		865	927	803	640	786	786		36	25	27	23	17	20				
Bulgaria		3 096	1 087	903	1 037	1 325	1 697		36	13	11	12	16	20				
Croatia		1 204	1 228	1 073	1 129	748	748		27	27	27	24	25	17				
Czech Republic	548	524	487	586	481	545	449	5	5	5	6	5	5	4				
Denmark	243	120	128	97	114	132	172	2	2	2	2	2	3	3				
Estonia	303	347	369	240	269	299	274	20	23	25	16	19	21	19				
Finland		244	240	186	186	188	179		6	6	5	4	4	3				
France	4 455	3 196	3 449	3 002	2 430	2 325	2 325	8	6	6	5	4	4	4				
Georgia		221	482	595	547	746	746		4	4	9	12	11	15				
Germany	4 730	4 177	3 852	3 689	3 346	3 124	3 124	6	5	5	5	4	4	0				
Greece			285	313	143	143	143		3	3	3	3	3	1				
Hungary	1 905	1 357	796	1 066	702	667	660	19	13	8	10	7	7	7				
Iceland		6	2	1	4	2	2		2	1	0	1	1	1				
Ireland			339	123	116	117	117				9	3	3	3				
Israel			147	207	221	170	170				3	4	4	3				
Italy		1 441	1 413	1 738	1 903	2 361	1 277		3	2	3	3	4	2				
Kazakhstan		3 022	4 290	4 332	6 180	6 977	6 977		15	18	22	33	18	35				
Kyrgyzstan		681	832	991	1 536	830	1 642		18	20	23	26	28	25				
Latvia	470	504	575	634	668	588	588	18	18	26	30	32	21	21				
Lithuania	688	979	1 121	1 200	787	787	787	18	18	26	30	32	21	21				
Luxembourg			31	24	6	9	9		4	2	1	1	2	2				
Malta	13	6	5	5	3	6	6				0	0	6	6				
Monaco			0	0	0	2	2				2	2	2	2				
Netherlands	1 063		575	358	312	254	308	7		4	2	2	2	2				
Norway		86	62	103	100	49	21		2	1	2	2	1	0				
Poland	7 606	4 000	6 955	6 819	3 497	3 502	3 177	20	10	18	18	9	9	8				
Portugal		2 072	2 019	1 938	1 628	2 016	1 801		21	20	20	17	20	18				
Republic of Moldova	615	704	665	219	397	477	609	14	16	15	5	9	11	14				
Romania	9 339	10 385	10 469	10 359	11 666	10 841	10 317	41	45	46	46	52	48	46				
Russian Federation		30 389	37 512	42 534	42 094	42 219	21 744		20	25	29	29	29	15				
San Marino			0	1	1	0	0				0	4	0	0				
Slovakia	882	409	788	760	283	303	246	17	8	15	14	5	6	5				
Slovenia	361	294	303	221	156	157	165	18	15	15	11	8	8	8				
Spain		2 605	8 331	6 970	1 906	1 906	0		7	21	18	18	5	0				
Sweden	312	106	102	90	94	97	117	4	1	1	1	1	1	1				
Switzerland	528	507	185	172	144	165	98	8	7	3	2	2	2	1				
Tajikistan		1 042	232	373	435	435	435		18	18	4	6	7	7				
TFYR Macedonia		319	209	192	179	122	122		16	16	11	10	9	6				
Turkey		4 383	2 816	3 439	3 692	4 124	4 124		7	7	5	5	6	6				
Turkmenistan	472	544	557	764	790	964	964	12	13	13	13	18	18	22				
Ukraine	8 314	8 471	8 263	7 827	9 533	10 586	10 412	16	16	16	15	19	21	21				
United Kingdom	283	270	4 147	844	1 342	797	797	0	0	7	7	1	2	1				
Uzbekistan		7 487	2 735	3 388	3 504	3 977	3 504	34	34	12	15	15	15	17				
Yugoslavia		1 497	1 783	1 702	1 873	2 517	2 517			14	14	17	16	24				
Total	45 606	83 415	104 633	119 080	113 587	111 371	86 271	5	10	12	14	13	13	10				

Notes

Belarus The number reported as “smear-positive” cases included culture-positive cases. Age groups were different from those in the WHO data collection form.

Belgium 1998 treatment outcome data were not yet available.

Bulgaria The number reported as “smear-positive” cases included culture-positive cases. The total number of cases included 288 retreatment cases.

Croatia New smear-positive cases included 273 cases that were bacteriologically positive but unknown by smear or culture.

Denmark The data included 63 cases from Greenland and 2 cases from Faeroe Islands.

France New cases included 129 cases with unknown site of disease.

Germany Notifications in this annex are not included in regional and global summaries elsewhere in the report. Notifications included retreatment cases.

Latvia Treatment outcome excluded patients in prisons. MDR TB patients were not included in the data for treatment outcomes.

Russian Federation (the) DOTS age/sex data not available from Arcangelsk region. All data from one DOTS oblast, Leningrad, included in non-DOTS data.

Spain Notifications included respiratory cases and cases of TB meningitis only.

Switzerland The total number of cases included 177 cases with unknown site of disease.

The former Yugoslav Republic of Macedonia The number reported as “smear-positive” cases included culture-positive cases.

Turkey The number reported as “smear-positive” cases included culture-positive cases. Notifications included 3 336 cases with unknown site of disease.

United Kingdom of Great Britain and Northern Ireland (the) The number of smear-positive cases does not include cases from Scotland. The total number of notifications is for the UK as a whole, and includes all retreatment cases.

Yugoslavia Kosovo and Metohija are excluded from the data but internally displaced persons from Kosovo and Metohija and refugees from Croatia and Bosnia and Herzegovina are included.

SOUTH-EAST ASIA

South-East Asia: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
Bangladesh						3	
Bhutan						4	
Democratic People's Republic of Korea (the)						2	x
India						3	
Indonesia						3	
Maldives						4	
Myanmar						3	
Nepal						3	
Sri Lanka						4	
Thailand						3	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional profile for South-East Asia, cont'd: age and sex distribution of smear-positive cases in DOTS areas, 1999 (absolute numbers)

	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	235	3 076	5 151	5 583	4 365	3 277	2 466	376	2 384	2 928	1 963	1 177	656	299	611	5 460	8 079	7 546	5 542	3 933	2 765
Bhutan	10	27	42	31	29	22	14	9	33	34	23	18	14	9	19	60	76	54	47	36	23
DPR Korea	3	38	56	52	38	20	5	2	18	24	37	18	8	4	5	56	80	89	56	28	9
India	327	7 058	8 856	7 900	6 172	3 864	1 982	785	5 497	4 848	2 773	1 504	898	436	1 112	12 555	13 704	10 673	7 676	4 762	2 418
Indonesia	106	3 741	5 277	4 999	4 401	3 267	1 697	140	3 595	12 859	3 624	2 812	1 909	745	246	7 336	18 136	8 623	7 213	5 176	2 442
Maldives	0	14	8	9	7	7	8	3	10	6	3	6	6	1	3	24	14	12	13	13	9
Myanmar	37	936	1 800	1 805	1 366	833	540	58	737	1 076	919	647	420	284	95	1 673	2 876	2 724	2 013	1 253	824
Nepal	106	1 411	1 277	1 249	1 113	806	548	147	914	822	540	387	212	141	253	2 325	2 089	1 789	1 500	1 018	689
Sri Lanka	8	255	406	621	646	440	325	10	264	231	168	148	126	101	18	519	637	789	794	566	426
Thailand	20	791	2 123	2 015	1 702	1 705	1 795	30	511	771	676	750	879	1 164	50	1 302	2 894	2 691	2 452	2 584	2 959
Regional total	852	17 347	24 996	24 264	19 839	14 241	9 380	1 560	13 963	23 599	10 726	7 467	5 128	3 184	2 412	31 310	48 595	34 990	27 306	19 369	12 564

Regional profile for South-East Asia, cont'd: age and sex distribution of smear-positive cases in non-DOTS areas, 1999 (absolute numbers)

	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	24	428	626	560	383	291	235	29	369	348	217	138	56	34	53	797	974	777	521	347	269
Bhutan																					
DPR Korea	11	256	382	349	256	131	25	8	144	211	290	219	60	8	19	400	593	639	475	191	33
India																					
Indonesia																					
Maldives																					
Myanmar																					
Nepal	44	461	523	454	432	355	251	38	325	311	214	166	104	59	82	786	834	668	598	459	310
Sri Lanka																					
Thailand																					
Regional total	79	1 145	1 531	1 363	1 071	777	511	75	838	870	721	523	220	101	154	1 983	2 401	2 084	1 594	997	612

Regional profile for South-East Asia, cont'd: smear-positive notification rates by age and sex, 1999

	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	0.6	11.5	29.2	45.5	49.6	61.3	67.3	0.9	9.6	16.9	16.3	15.2	13.8	8.2	0.7	10.6	23.2	31.0	33.2	39.0	37.5
Bhutan	2.2	14.0	30.0	30.4	41.2	44.8	36.2	2.1	17.6	25.0	23.0	25.5	27.4	20.3	2.2	15.7	27.5	26.7	33.3	35.9	27.7
DPR Korea	0.2	8.1	8.5	10.9	12.7	10.6	3.6	0.2	4.6	4.7	9.2	11.2	4.7	0.7	0.2	6.4	6.6	10.1	12.0	7.6	1.7
India	0.2	7.2	10.7	12.2	14.1	13.5	8.5	0.5	6.1	6.5	4.7	3.6	3.1	1.7	0.3	6.7	8.7	8.6	9.0	8.2	4.9
Indonesia	0.3	17.6	29.0	37.7	52.6	54.8	38.5	0.4	17.4	71.5	26.8	31.9	29.1	14.2	0.4	17.5	50.1	32.2	42.0	41.3	25.3
Maldives	0.0	48.6	41.3	66.1	87.4	117.7	155.2	5.1	35.8	33.7	23.3	73.1	121.2	21.3	2.5	42.3	37.7	45.2	80.2	119.3	91.3
Myanmar	0.6	19.4	43.6	60.6	76.5	68.9	55.1	0.9	15.6	26.1	29.8	34.9	31.1	24.8	0.7	17.5	34.8	44.9	55.3	49.0	38.8
Nepal	1.5	39.1	58.0	76.4	94.6	107.1	95.8	2.0	27.9	34.1	31.2	33.0	30.1	23.9	1.7	33.7	45.6	52.9	63.5	69.2	59.9
Sri Lanka	0.3	13.6	27.2	50.5	70.4	75.9	56.0	0.4	14.6	15.1	12.3	14.6	19.9	15.9	0.4	14.1	21.0	30.4	41.2	46.7	35.0
Thailand	0.3	13.3	35.8	45.2	60.8	96.8	120.1	0.4	8.9	13.4	15.1	25.9	45.2	59.9	0.3	11.1	24.8	30.1	43.0	69.7	86.0
Regional rate	0.3	10.8	18.8	24.1	29.3	32.3	27.1	0.6	9.3	18.5	11.4	11.7	11.2	8.0	0.5	10.1	18.7	17.9	20.7	21.7	17.0

Regional profile for South-East Asia, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
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
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
DPR Korea									0									11 050	1 152	13 286
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	1 219 923	1 300 935	1 135 983	1 130 038	1 223 127
Indonesia	25 235	32 461	33 000	31 809	32 432	17 681	16 750	111	97 505	105 516	74 470	60 808	98 458	62 966	49 647	35 529	24 647	22 184	40 497	69 064
Maldives	73	112	111	143	123	91	111	115	85	203	152	123	92	175	249	231	212	173	175	153
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
Nepal	1 020	337	1 459	700	190	52	252	1 012	1 603	11 003	10 142	8 983	6 802	13 161	15 572	19 804	22 970	24 158	24 135	27 356
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	5 956	5 439	6 528	7 024	7 133
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
Total	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	1 402 836	1 481 017	1 312 091	1 307 175	1 469 671
number reporting	9	9	9	9	9	9	9	8	10	9	9	9	8	9	9	9	9	10	10	10
percent reporting	90	90	90	90	90	90	90	80	100	90	90	90	80	90	90	90	90	100	100	100

Regional profile for South-East Asia, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bangladesh	45	47	54	56	47	42	45	44	42	42	45	50	28	47	41	48	53	52	58	63
Bhutan	117	197	52	72	62	72	104	39	70	92	68	58	8	6	64	70	67	62	65	57
DPR Korea									0										5	56
India	102	109	128	146	148	152	163	175	178	181	179	179	127	120	122	131	137	118	115	123
Indonesia	17	21	21	20	20	11	10	10	55	59	41	33	52	33	26	18	12	11	20	33
Maldives	46	69	66	83	69	50	59	59	42	97	71	55	40	74	103	93	83	66	65	55
Myanmar	38	36	34	31	30	28	28	31	24	27	31	36	41	45	37	43	51	39	33	44
Nepal	7	2	10	5	1	0	2	6	9	60	54	47	65	65	75	93	105	108	106	117
Sri Lanka	42	42	48	43	40	37	41	39	37	38	39	36	39	39	35	33	30	36	38	38
Thailand	98	104	100	132	138	152	100	98	93	81	84	78	84	86	82	78	67	51	26	48
Total	79	85	98	110	111	113	118	124	133	136	133	132	98	94	93	99	103	90	88	97

Regional profile for South-East Asia, cont'd: new smear-positive cases, 1993-99

Country/territory	Number of cases										Rate (per 100 000 population)										
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999
Bangladesh	18 993	1 710	20 524	29 674	33 117	37 737	37 821	17	1	17	25	27	30	30	1	17	25	27	30	30	30
Bhutan		352	367	308	284	270	315		19	20	16	15	13	15		20	16	15	13	13	15
DPR Korea					3 980	403	5 073							2					17	2	21
India	225 256	226 543	264 618	291 205	273 519	284 066	349 770	25	25	28	31	28	29	35	25	25	28	31	28	29	35
Indonesia	62 966	49 647	31 768	11 790	19 492	32 280	49 172	33	26	16	6	10	16	23	33	26	16	6	10	16	23
Maldives	126	125	114	106	94	88	88	54	52	46	41	36	32	32							
Myanmar			8 681	9 716	9 695	10 089	11 458														
Nepal	6 679	10 442	8 591	10 365	11 323	11 306	13 410	33	50	40	22	22	23	25	33	50	40	22	22	23	25
Sri Lanka	3 335	3 405	3 049	2 958	3 506	3 747	3 749	19	19	17	16	19	20	20	19	17	16	16	19	20	20
Thailand		20 260	20 273	16 997	13 214	7 962	14 934		35	35	29	22	13	25							
Total	317 355	312 484	357 985	373 119	368 224	387 948	485 790	23	22	25	26	25	26	32	23	22	25	26	25	26	32

Notes

India The number of patients reported under “Other Strategies” includes patients from DOTS areas put on non-DOTS regimens (a practice now being discouraged).

Maldives The standard WHO data collection form was not used.

Nepal Data in this report were from July 1999 to June 2000 (the closest equivalent reporting period in Nepal’s calendar).

WESTERN PACIFIC

The Western Pacific: Summary of TB control policies

Country	Microscopy (a)	SCC (b)	DOT (c)	Outcome monitoring (d)	Drug supply (e)	Category as of 31/12/99*	DOTS newly implemented in 1999
American Samoa						4	
Australia						3	
Brunei Darussalam						0	
Cambodia						4	
China						3	
China, Hong Kong SAR						3	
China, Macao SAR						0	
Cook Islands						3	
Fiji						4	
French Polynesia						4	
Guam						0	
Japan						1	
Kiribati						4	
Lao People's Democratic Republic (the)						0	
Malaysia						1	
Marshall Islands (the)						3	
Micronesia (Federated States of)						0	
Mongolia						4	
Nauru						0	
New Caledonia						0	
New Zealand						5	
Niue						1	
Northern Mariana Islands (Commonwealth of)						1	
Palau						1	
Papua New Guinea						2	
Philippines (the)						3	
Republic of Korea (the)						1	
Samoa						4	
Singapore						1	
Solomon Islands						4	
Tokelau						1	
Tonga						4	
Tuvalu						0	
Vanuatu						3	
Viet Nam						4	
Wallis and Futuna Islands						0	

Microscopy (a) Use of smear microscopy for diagnosis
 SCC (b) Short course chemotherapy
 DOT (c) Directly observed therapy
 Outcome monitoring (d) Monitoring of treatment outcomes by cohort analysis
 Drug supply (e) A system of TB drug forecasting, financing, and procurement
 * See table 1 for definition of categories

dark green implemented in all units/areas
 light green implemented in some units/areas
 grey not implemented
 white unknown or not applicable (decentralized drug supply system)

Regional profile for the Western Pacific, cont'd: age and sex distribution of smear-positive cases in DOTS areas, 1999 (absolute numbers)

	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	0							0							0							
Australia																						
Brunei Darussalam																						
Cambodia	41	525	1 389	1 734	1 645	1 578	1 089	51	445	1 229	1 861	1 857	1 448	852	92	970	2 618	3 595	3 502	3 026	1 941	
China	1 053	16 937	26 050	22 190	21 642	19 217	18 879	1 278	13 725	16 704	10 850	8 628	6 315	4 969	2 331	30 662	42 754	33 040	30 270	25 532	23 848	
China, Hong Kong SAR	3	76	104	139	149	200	371	7	73	94	62	43	37	162	10	149	198	201	192	237	533	
China, Macao SAR																						
Cook Islands																						
Fiji	1	13	7	5	8	3	3	0	5	7	5	2	5	1	1	18	14	10	10	8	4	
French Polynesia	0	2	2	2	1	2	4	4	2	2	4	2	3	3	4	4	4	6	3	5	7	
Guam																						
Japan																						
Kiribati	2	6	4	2	4	4	3	1	9	9	6	2	3	4	3	15	13	8	6	7	7	
Lao PDR																						
Malaysia																						
Marshall Islands	5	10	3	4	1	6	0	2	10	7	2	2	2	0	7	20	10	6	3	8	0	
Micronesia																						
Mongolia	12	213	314	178	63	34	26	25	205	252	113	43	18	17	37	418	566	291	106	52	43	
Nauru																						
New Caledonia																						
New Zealand																						
Niue																						
Northern Mariana Is																						
Palau																						
Papua New Guinea	1	33	25	9	8	3	0	0	32	20	13	6	0	1	1	65	45	22	14	3	1	
Philippines																						
Rep. Korea	0	1	2	0	1	1	4	0	3	2	1	0	0	2	0	4	4	1	1	1	6	
Samoa																						
Singapore																						
Solomon Islands																						
Tokelau																						
Tonga	0	1	0	0	1	3	2	0	1	0	0	0	2	0	0	2	0	0	1	5	2	
Tuvalu																						
Vanuatu	0	0	4	1	2	0	0	0	2	10	4	1	0	0	0	2	14	5	3	0	0	
Viet Nam	58	2 246	6 326	8 354	6 431	5 502	7 351	65	1 356	2 496	3 017	2 525	3 021	4 813	123	3 602	8 822	11 371	8 956	8 523	12 164	
Wallis & Futuna Is																						
Regional total	1 176	20 063	34 230	32 618	29 956	26 553	27 732	1 433	15 868	20 832	15 938	13 111	10 854	10 824	2 609	35 931	55 062	48 556	43 067	37 407	38 556	

Regional profile for the Western Pacific, cont'd: age and sex distribution of smear-positive cases in non-DOTS areas, 1999 (absolute numbers)

	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+	
American Samoa	0	13	40	54	52	37	49	0	10	16	18	6	2	26	
Australia															
Brunei Darussalam															
Cambodia															
China	194	2 024	3 278	2 905	2 597	2 347	2 488	153	1 453	2 142	1 520	1 210	816	694	
China, Hong Kong SAR	0	12	17	23	24	33	61	1	12	15	10	7	6	26	
China, Macao SAR															
Cook Islands															
Fiji															
French Polynesia															
Guam	6	290	623	706	1 605	1 768	4 117	7	236	459	253	292	419	2 128	
Japan															
Kiribati															
Lao PDR															
Malaysia	27	682	1 147	1 152	977	902	880	32	513	558	422	351	286	268	
Marshall Islands															
Micronesia															
Mongolia															
Nauru															
New Caledonia	1	10	8	4	3	8	15	1	6	7	2	3	0	1	
New Zealand															
Niue															
Northern Mariana Is															
Palau	0	2	2	5	1	2	1	0	1	3	1	0	2	0	
Papua New Guinea															
Philippines	27	884	1 205	1 180	871	962	1 136	40	704	653	402	256	306	933	
Rep. Korea															
Samoa															
Singapore	0	18	23	41	72	55	124	0	12	21	18	23	17	29	
Solomon Islands															
Tokelau	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tonga															
Tuvalu															
Vanuatu															
Viet Nam	8	29	38	38	34	28	20	3	5	15	12	24	13	15	
Wallis & Futuna Is															
Regional total	255	3 954	6 372	6 108	6 236	6 142	8 891	237	2 952	3 889	2 658	2 172	1 867	4 120	
								492	6 906	10 261	8 766	8 408	8 009	13 011	

Regional profile for the Western Pacific, cont'd: smear-positive notification rates by age and sex, 1999

	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	0.0	0.5	1.4	1.9	2.1	2.2	2.5	0.0	0.4	0.6	0.6	0.2	0.1	1.0	0.0	0.4	1.0	1.3	1.1	1.2	1.7	
Brunei Darussalam																						
Cambodia	1.8	60.4	159.6	289.8	451.0	861.5	915.6	2.3	51.6	137.2	269.6	404.8	514.7	388.5	2.0	56.0	148.2	279.0	425.3	651.5	573.8	
China	0.4	9.1	11.5	13.2	16.5	23.9	27.4	0.5	7.9	7.7	7.0	7.2	8.5	6.2	0.4	8.5	9.7	10.2	12.0	16.5	15.9	
China, Hong Kong SAR	0.2	7.9	10.0	11.6	17.5	41.7	65.4	0.7	9.0	11.0	5.6	5.9	9.6	25.0	0.5	8.4	10.4	8.7	12.2	27.4	43.9	
China, Macao SAR																						
Cook Islands																						
Fiji	0.8	14.5	11.9	9.6	22.1	12.4	17.5	0.0	6.0	12.5	9.7	5.6	20.3	5.3	0.4	10.4	12.2	9.6	13.9	16.4	11.1	
French Polynesia	0.0	9.6	9.9	12.4	9.6	28.3	88.2	10.6	9.8	10.8	26.9	21.0	48.3	61.4	5.2	9.7	10.4	19.3	15.0	37.7	74.3	
Guam																						
Japan	0.1	3.4	6.7	8.8	16.3	22.5	46.9	0.1	2.9	5.1	3.2	3.0	5.1	17.4	0.1	3.2	5.9	6.0	9.6	13.6	29.8	
Kiribati																						
Lao PDR																						
Malaysia	0.7	32.8	68.8	79.0	98.6	157.5	215.3	0.9	25.4	33.6	29.4	36.6	50.5	56.2	0.8	29.2	51.2	54.4	68.1	104.3	129.6	
Marshall Islands																						
Micronesia																						
Mongolia	2.5	76.4	140.8	111.4	81.9	61.4	57.7	5.5	74.8	114.1	69.5	54.9	32.1	29.2	4.0	75.6	127.5	90.3	68.3	46.7	41.6	
Nauru																						
New Caledonia																						
New Zealand	0.2	3.6	2.9	1.4	1.2	5.0	7.8	0.2	2.3	2.4	0.7	1.2	0.0	0.4	0.2	3.0	2.6	1.0	1.2	2.5	3.6	
Niue																						
Northern Mariana Is																						
Palau																						
Papua New Guinea	0.1	6.9	6.3	3.4	4.6	3.0	0.0	0.0	7.1	5.6	5.7	3.4	0.0	1.3	0.1	7.0	5.9	4.5	4.0	1.5	0.7	
Philippines																						
Rep. Korea	0.5	21.8	27.3	29.0	34.1	53.0	100.5	0.8	18.5	15.5	10.1	10.2	15.8	49.7	0.7	20.2	21.5	19.7	22.3	33.7	68.8	
Samoa	0.0	4.9	13.1	0.0	19.3	25.8	110.3	0.0	16.5	16.6	12.7	0.0	0.0	46.3	0.0	10.3	14.7	6.1	9.5	12.4	75.5	
Singapore	0.0	7.9	7.6	11.6	29.1	44.9	111.2	0.0	5.6	6.9	5.1	9.5	13.7	21.5	0.0	6.8	7.2	8.4	19.4	29.3	62.0	
Solomon Islands																						
Tokelau																						
Tonga																						
Tuvalu																						
Vanuatu	0.0	0.0	33.8	11.1	30.5	0.0	0.0	0.0	11.4	74.8	37.4	15.5	0.0	0.0	0.0	5.5	55.6	25.4	23.0	0.0	0.0	
Viet Nam	0.2	13.7	46.5	91.6	140.3	176.4	225.8	0.3	8.7	19.2	28.9	45.9	79.2	96.8	0.2	11.2	33.1	58.2	88.7	123.0	147.9	
Wallis & Futuna Is																						
Regional rate	0.4	9.8	14.0	17.7	21.4	30.7	38.6	0.5	8.2	8.9	9.0	9.5	12.6	13.0	0.4	9.1	11.5	13.5	15.6	21.9	24.5	

Regional profile for the Western Pacific, cont'd: number of TB cases notified, 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
American Samoa	2	6	6	8	12	5	8	9	13	5	9	3	1	1	1	0	0	6	4	
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	
Brunei Darussalam	196	285	245	276	256	238	212	189	126	128	143	180	180					160		
Cambodia	2 576	1 980	8 158	7 572	10 241	10 145	10 325	9 106	7 906	7 906	6 501	10 903	16 148	13 270	15 172	14 603	14 857	15 629	16 946	19 266
China	7 630	10 970	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	469 358	418 904	457 349	460 169
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	6 545	6 537	6 319	6 212	6 501	7 072	7 673	7 673
China, Macao SAR	1 101	585	233	455	671	571	420	389	320	274	343	329	294	285		354	455	589	463	
Cook Islands	37	10	19	29	20	36	17	16	20	1	1	8	12					0	0	3
Fiji	210	180	163	185	165	230	199	173	162	218	226	247	240	183	280	203	200	171	166	192
French Polynesia	76	66	65	78	80	78	85	80	63	73	59	49	83				86	91	105	93
Guam	55	41	49	48	54	37	49	34	41	75	60	60	60							
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
Kiribati	146	187	193	127	111	103	129	110	208	121	68	91	100				327	32	276	253
Lao PDR	7 630	10 970	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	1 227	1 440	1 923	2 165	
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	11 988	12 902	13 539	14 115	14 908
Marshall Islands	6	7	12	15	12	15	37	32	11	7	367	350	111	151	173	115	56	94	49	42
Micronesia	1 161	1 094	1 340	1 512	1 651	2 992	2 818	2 432	2 541	2 237	1 577	1 611	1 502	1 433	1 730	3 240	2 987	2 987	2 915	3 348
Mongolia																				
Nauru	0	2	8	0	0	0	8	6	8	0	7	140	140	149	132	120	205			
New Caledonia	108	128	120	171	144	104	320	296	295	303	348	335	317	274	352	307	356	328	367	451
New Zealand	474	448	437	415	404	359	320	296	295	303	348	335	317	274	352	307	356	328	367	451
Niue	1	0	2	3	1	0	5	0	3	0	0	0	2	1	2	2	2	0	1	2
Northern Mariana Is	26	26	75	74	58	64	16	56	27	28	28	6	67	4	46	48	51	93	97	66
Palau	17	10	17	14	20	26	13	38	17	3	28	6	4	25	41	19	5	15	32	32
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	5 097	7 977	11 291	13 067
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	236 475	276 295	208 301	159 866	145 807
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	49 794	32 587	26 202	30 008	23 936
Samoa	59	49	43	41	37	43	65	29	29	37	44	44	26	49	45	51	37	32	22	31
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	737	1 977	2 120	1 654
Solomon Islands	266	313	324	302	337	377	292	334	372	488	382	309	364	367	332	352	299	318	295	289
Tokelau	0	1	0	0	0	2	0	9	1	0	1	1	1							0
Tonga	64	49	45	50	54	49	35	24	14	36	23	20	29	33	23	20	22	21	30	22
Tuvalu	33	18	12	23	9	32	27	22	24	26	23	30	30	28	19	36			18	
Vanuatu	178	92	173	196	188	124	131	90	118	144	140	230	193	114	152	79	126	184	178	117
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	83 608	74 711	84 964	87 449	88 879
Wallis & Futuna Is	23	24	5	17	14	14		34	1	30		22	4	11	11	6	8	14		
Total	356 482	355 345	461 572	462 193	541 001	615 179	651 853	655 019	716 450	741 916	893 992	760 870	754 466	718 366	723 932	978 706	941 923	834 972	839 019	822 177
number reporting	33	33	36	36	36	36	35	36	36	35	32	31	35	26	27	28	31	30	28	27
percent reporting	92	92	100	100	100	100	97	100	100	97	89	86	97	72	75	78	86	83	78	75

Regional profile for the Western Pacific, cont'd: case notification rates (per 100 000 population), 1980-99

Country/territory	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
American Samoa	6	18	17	22	32	13	20	21	30	11	19	6	2	6	6	6	0	10	10	6
Australia	10	9	9	8	8	7	6	6	6	6	6	6	6	6	6	6	6	6	5	6
Brunei Darussalam	102	143	120	131	118	107	92	80	52	51	56	6	66	6	6	6	0	52	6	6
Cambodia	40	30	122	110	143	137	135	116	132	94	75	122	176	140	156	146	145	149	158	176
China	10	10	10	11	14	21	24	23	27	27	33	30	27	29	30	42	38	34	36	36
China, Hong Kong SAR	160	150	144	137	145	138	135	131	126	119	114	109	111	109	104	100	102	109	115	113
China, Macao SAR	437	226	87	162	229	187	132	117	93	76	92	86	74	70	70	82	103	131	101	101
Cook Islands	207	57	110	171	119	215	100	93	113	6	6	43	64	32	37	26	0	0	10	16
Fiji	33	28	25	27	24	33	28	24	23	30	31	34	32	24	22	22	22	22	21	24
French Polynesia	50	42	41	47	47	45	48	44	34	38	30	25	41	41	37	39	39	41	46	40
Guam	52	38	44	42	46	31	40	27	32	57	30	42	43	39	36	34	34	34	35	32
Japan	61	56	54	52	51	49	47	46	44	43	42	41	39	39	36	34	34	34	35	32
Kiribati	239	301	305	197	169	154	190	159	297	170	94	124	134	134	40	415	415	40	341	308
Lao PDR	238	141	138	138	187	119	41	91	186	73	44	46	23	46	24	26	29	38	42	42
Malaysia	82	78	83	78	69	67	67	67	65	61	66	60	61	64	60	60	63	65	66	68
Marshall Islands	17	20	33	40	31	37	90	75	25	16	16	55	105	105	105	99	99	81	81	68
Micronesia	76	76	76	80	80	70	63	102	80	71	380	357	111	148	165	107	86	97	121	121
Mongolia	70	64	76	84	89	157	143	120	121	104	71	71	65	61	72	132	120	118	113	128
Nauru	0	26	102	0	0	0	92	67	88	0	73	73	79	82	70	62	104	104	10	12
New Caledonia	76	88	81	114	95	67	62	47	69	78	85	82	79	82	70	62	104	104	10	12
New Zealand	15	14	14	13	13	11	10	9	9	9	10	10	9	8	8	8	10	9	10	10
Niue	29	0	66	106	38	0	207	0	128	0	0	0	91	46	95	97	99	0	51	105
Northern Mariana Is	157	462	456	339	333	333	70	203	81	73	65	39	133	133	82	82	82	141	139	89
Palau	139	80	133	107	149	190	93	266	117	20	20	39	25	153	244	110	28	83	169	169
Papua New Guinea	82	79	85	90	104	100	82	63	116	90	65	87	63	181	127	187	116	177	246	278
Philippines	232	236	206	204	284	276	274	287	315	366	522	334	371	273	270	346	395	292	219	196
Rep. Korea	236	255	257	230	213	214	215	210	177	165	149	134	110	107	86	111	72	57	65	52
Samoa	38	32	28	26	24	27	41	18	18	23	28	27	16	30	27	30	22	19	13	18
Singapore	112	99	87	80	81	72	64	57	58	55	53	60	57	57	51	57	22	58	61	47
Solomon Islands	117	133	133	120	129	140	104	115	124	157	119	93	106	103	91	93	76	79	71	67
Tokelau	0	63	0	0	0	120	0	543	61	0	62	63	64	64	0	133	0	0	31	22
Tonga	70	53	49	54	58	52	37	25	15	38	24	21	30	34	24	21	23	22	31	22
Tuvalu	430	231	153	294	115	405	337	269	286	301	259	328	319	289	191	352	191	162	162	162
Vanuatu	152	77	140	155	146	94	97	65	83	99	94	150	123	71	92	47	73	104	98	63
Viet Nam	80	79	91	75	75	78	78	89	82	80	75	88	81	75	71	113	99	111	113	113
Wallis & Futuna Is	208	211	43	143	115	113	262	8	222	8	159	159	29	79	78	43	57	98	113	113
Total	27	27	34	34	39	44	46	45	49	50	59	49	48	46	45	61	58	51	51	49

Regional profile for the Western Pacific, cont'd: new smear-positive cases, 1993-99

Country/territory	Number of cases										Rate (per 100 000 population)										
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999
American Samoa				0	6	3	3											0	10	10	5
Australia	557				226	203	285	3											1	1	2
Brunei Darussalam					0														0		
Cambodia	84 898	11 058	11 101	12 065	12 686	13 865	15 744		114	111	118	121	129	144				118	121	129	144
China	2 429	104 729	134 488	168 270	188 530	214 462	212 426	7	9	11	14	15	17	23				14	15	17	23
China, Hong Kong SAR				2 116	1 536		1 566	41			33	24						33	24		
China, Macao SAR	108		141	204	304	226		26		33	46	68	49					46	68	49	
Cook Islands	58	60	68	69	66	74	65	8	8	9	9	8	9	8				9	8	9	8
Fiji				37	41	34	33											17	18	15	14
French Polynesia																					
Guam	17 890	16 770	14 367	12 867	13 571	11 935	12 909	14	13	11	10	11	9	10				10	11	9	10
Japan				29	11	50	59											37	14	62	72
Kiribati				886	1 234	1 508												18	25	29	
Lao PDR	6 954	6 861	6 688	7 271	7 596	7 802	7 960	36	35	33	35	36	36	36				35	36	36	36
Malaysia				17	11	11	17											30		18	27
Marshall Islands	86	145	622	1 171	1 171	1 356	1 513	4	6	25	47	46	53	58				47	46	53	58
Micronesia				7	10	28															
Mongolia																					
Nauru				26														13			
New Caledonia	91	42	26	47	57	81	69	3	2	1	2	2	2	2				2	2	2	2
New Zealand	0	0	1	1	0	1	1	0	0	0	0	0	0	0				50	0	0	52
Niue				14	26	21	15											24	42	32	20
Northern Mariana Is	8	11	9	4	7	7	20	49	65	52	23	39	105					42	32	37	20
Palau																					
Papua New Guinea	92 279	87 401	1 652	652	1 195	2 107	1 914	142	131	38	15	27	46	41				15	27	46	41
Philippines	16 630	13 266	11 754	11 420	9 957	10 359	9 559	38	30	26	25	22	22	21				124	117	98	99
Rep. Korea				15	14	7	17	13	11	9	6	8	4	10							
Samoa	21	18	15	10	14	7	17	13	11	9	6	8	4	10							
Singapore	513	861	455	208	432	480	465	16	16	14	6	13	14	13				6	13	14	13
Solomon Islands	155	114	109	90	113	140	93	44	31	29	23	28	34	22				23	28	34	22
Tokelau				0	0	0	0	0	0	0	0	0	0	0				0	0	0	0
Tonga	16	17	9	16	12	16	10	17	18	9	16	12	16	10				16	12	16	10
Tuvalu	2	1	6					21	10	59											
Vanuatu		62	30	50	66	38	43		38	18	29	37	21	23				29	37	21	23
Viet Nam			37 550	48 911	53 647	54 873	53 805			51	65	70	71	68				65	70	71	68
Wallis & Futuna Is			3	3	1					21	21	7						21	7		
Total	222 695	241 477	314 657	353 200	375 864	391 345	391 964	14	15	20	22	23	24	23				22	23	24	23

Notes

China The number of new extra-pulmonary TB cases was not reported. Treatment outcomes grouped completed with cured.

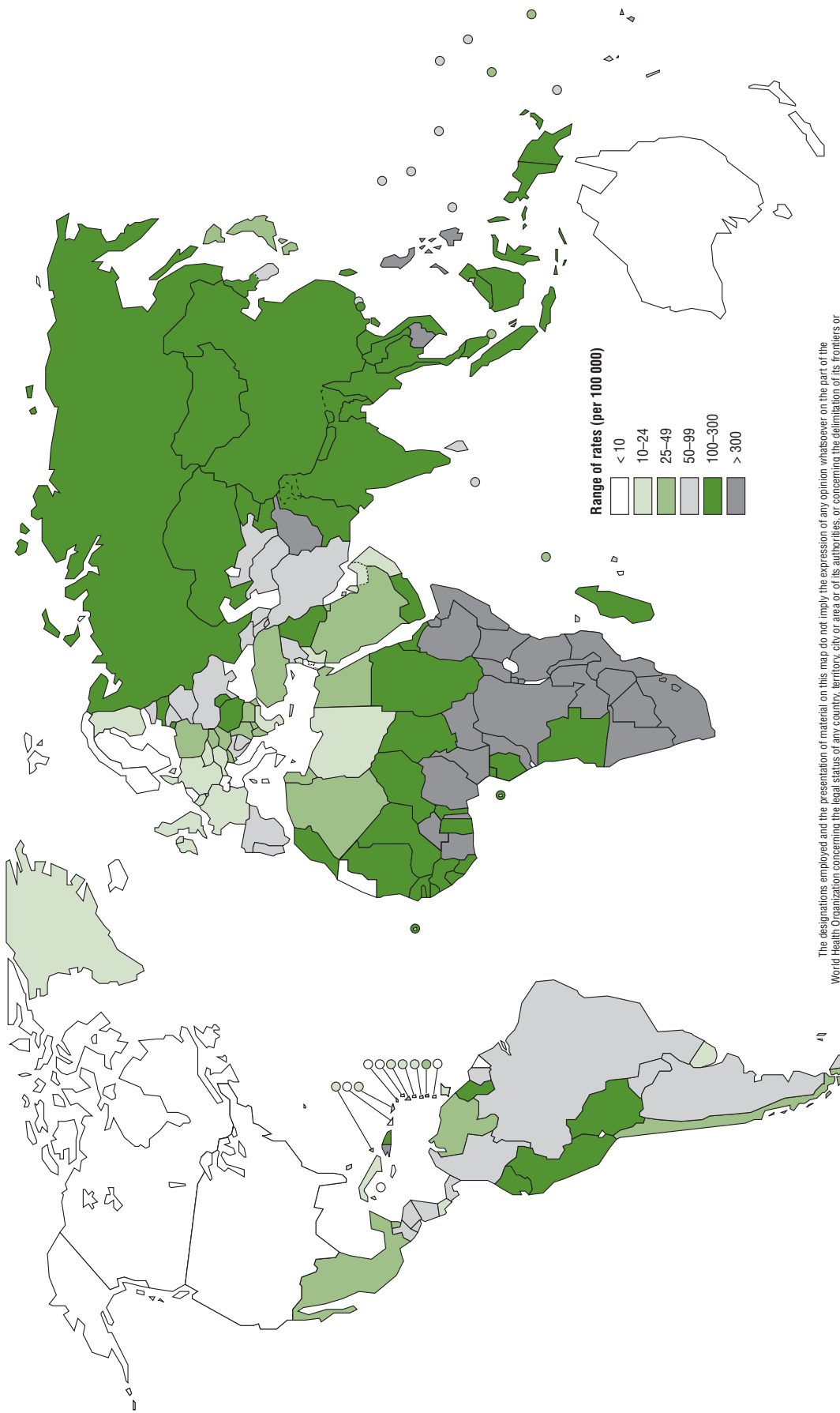
Malaysia No treatment outcomes were given for 1998. Outcomes for 1997 (not previously reported) were given as follows: 7 721 registered, 6 053 completed treatment, 492 died, 38 failed, 979 defaulted, 152 transferred.

ANNEX 5

World maps

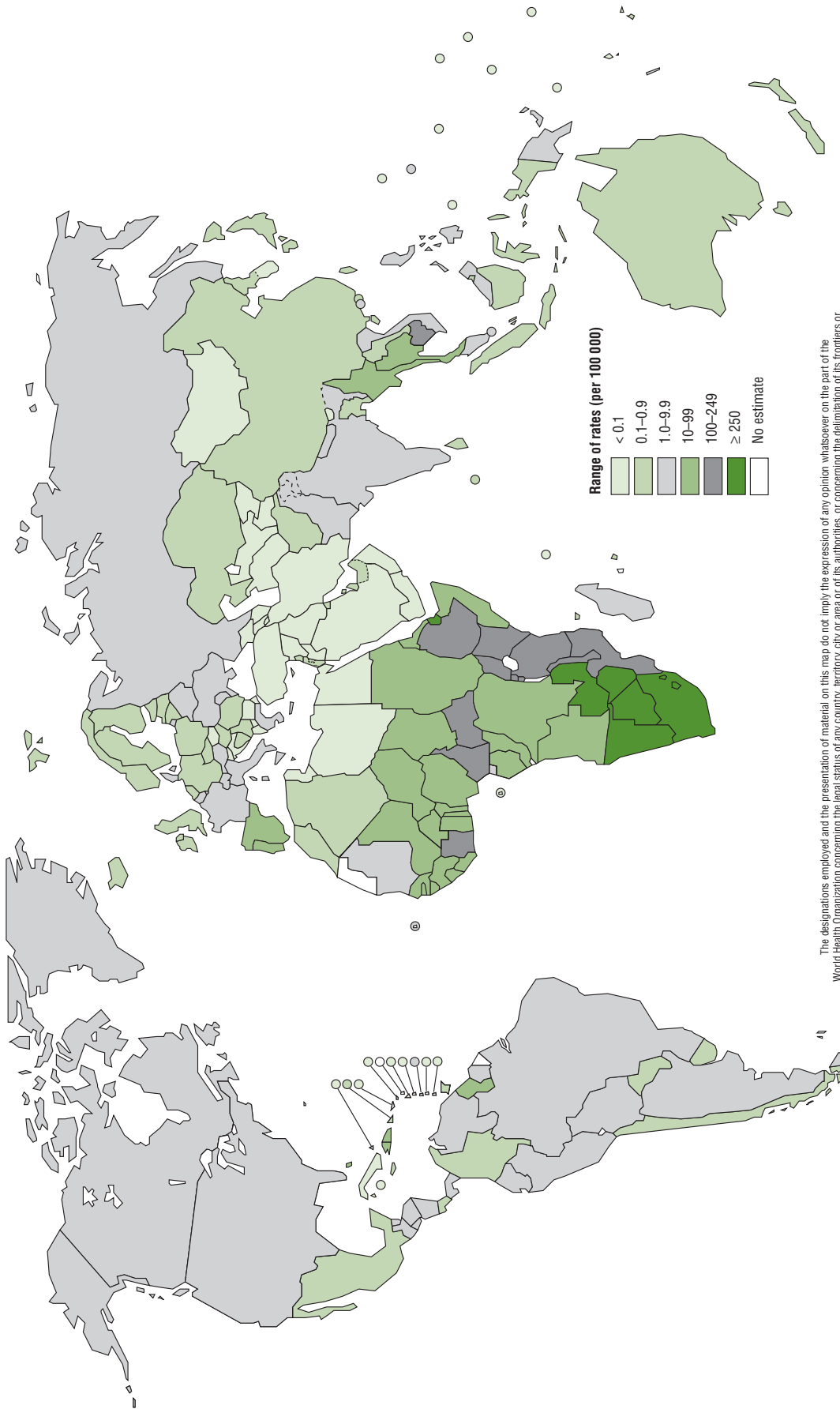
1. Estimated TB incidence rates, 1999
2. Estimated incidence rates of HIV-positive TB, 1999
3. Implementation of DOTS, 1999
4. Tuberculosis notification rates, 1999

1. Estimated TB incidence rates, 1999



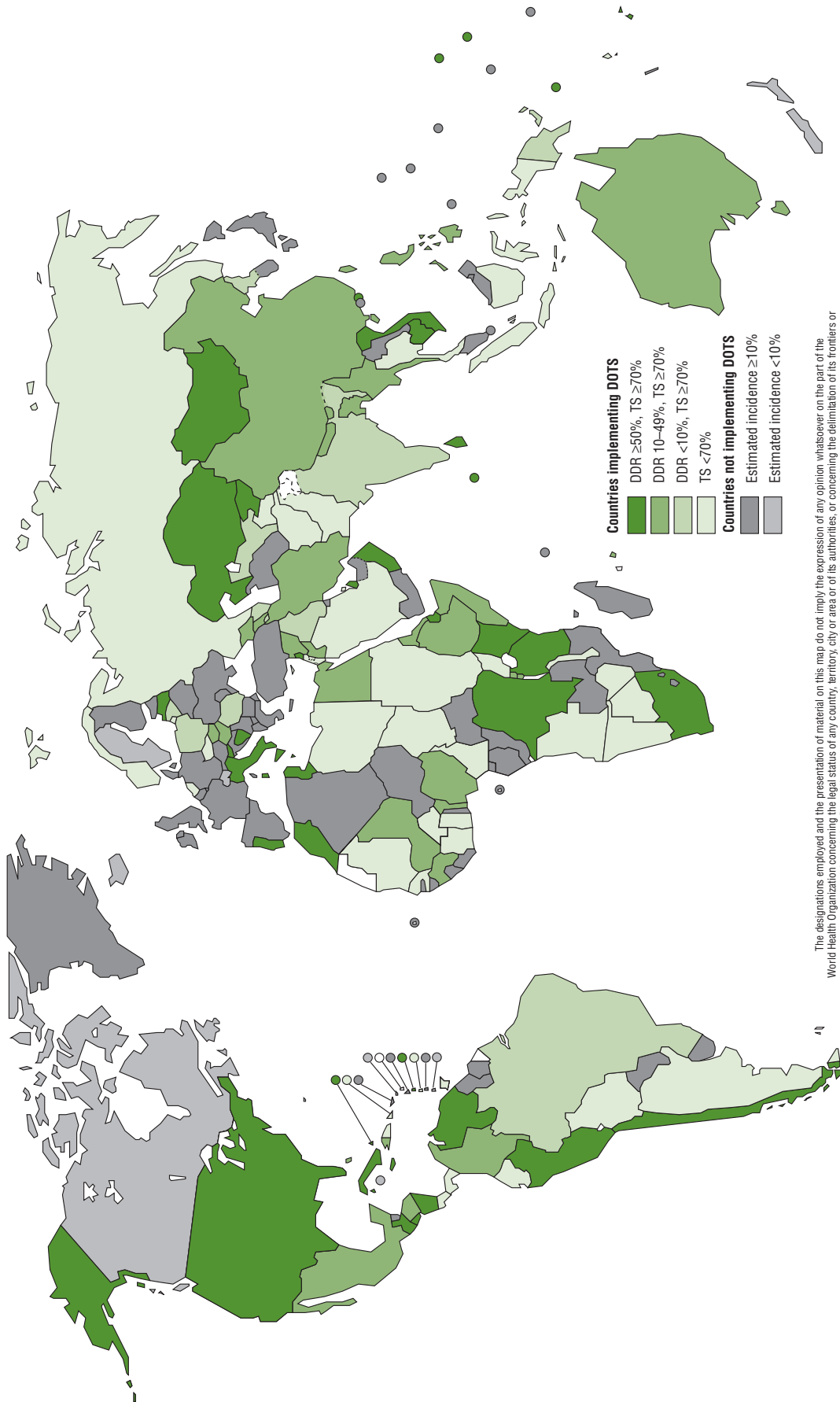
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines represent approximate border lines for which there may not yet be full agreement.

2. Estimated incidence rates of HIV-positive TB, 1999

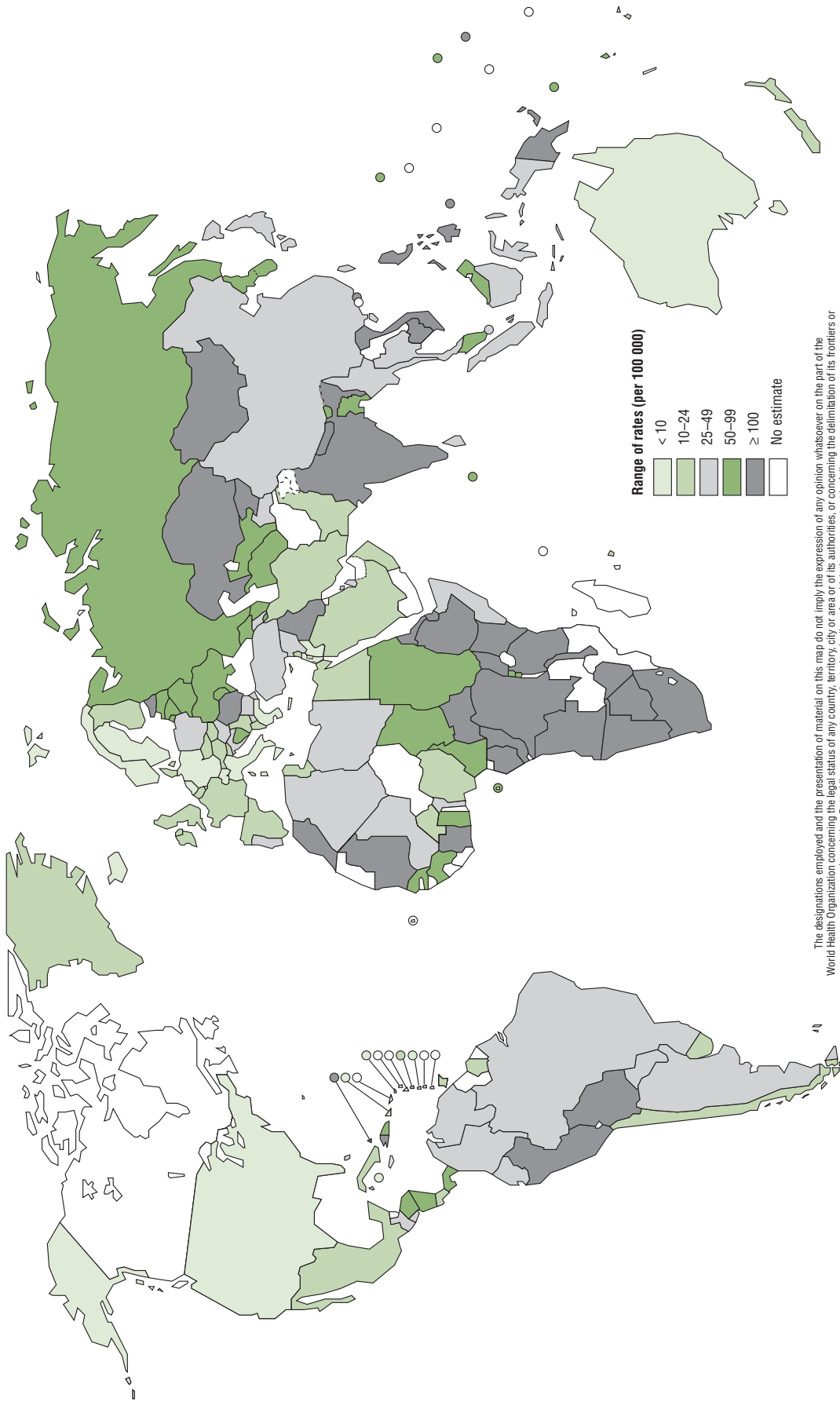


The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines represent approximate border lines for which there may not yet be full agreement.

3. Implementation of DOTS, 1999



4. Tuberculosis notification rates, 1999



The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines represent approximate border lines for which there may not yet be full agreement.

ANNEX 6

**Comparison of cases
notified and registered for
treatment in 1998**

Comparison of smear-positive cases notified in 1998 and registered for treatment in 1998

	Number of cases		% of notif registered		Number of cases		% of notif registered
	notified	registered			notified	registered	
Afghanistan	1 833	2 913	159	Djibouti	1 697	1 673	99
Albania	212			Dominica	5		
Algeria	7 462	2 490	33	Dominican Republic	2 194	2 194	100
American Samoa		4		DPR Korea	403	2 673	663
Andorra	1	2	200	DR Congo	33 419	33 442	100
Angola	7 350	2 626	36	Ecuador	6 455		
Anguilla				Egypt	4 915	4 472	91
Antigua and Barbuda		4		El Salvador	1 071	940	88
Argentina	5 186	5 234	101	Equatorial Guinea	284		
Armenia	475	387	81	Eritrea	223	270	121
Australia	203	237	117	Estonia	299	299	100
Austria				Ethiopia	18 864	14 836	79
Azerbaijan	727	727	100	Fiji	74	79	107
Bahamas	28	32	114	Finland	188		
Bahrain	110	99	90	France			
Bangladesh	37 737	38 029	101	French Polynesia	34	27	79
Barbados	4			Gabon	889	577	65
Belarus	5 047			Gambia	900		
Belgium	418			Georgia	547	534	98
Belize				Germany	3 124		
Benin	1 988	1 950	98	Ghana	7 005	7 288	104
Bermuda				Greece	313		
Bhutan	270	294	109	Grenada	2		
Bolivia	6 750	6 750	100	Guam			
Bosnia & Herzegovina	640	640	100	Guatemala	2 255	2 255	100
Botswana	2 826	2 734	97	Guinea	3 362	3 362	100
Brazil	38 809	30 078	78	Guinea-Bissau			
British Virgin Islands				Guyana	85		
Brunei Darussalam				Haiti	6 442	6 442	100
Bulgaria	1 325			Honduras	2 311	1 850	80
Burkina Faso	1 331	1 331	100	Hungary	667	662	99
Burundi	2 782	2 733	98	Iceland	2	2	100
Cambodia	13 865	13 287	96	India	284 066	284 063	100
Cameroon	4 374	971	22	Indonesia	32 280	40 166	124
Canada				Iran	5 105	5 249	103
Cape Verde	104			Iraq	8 850	7 933	90
Cayman Islands	2	2	100	Ireland	116	118	102
Central African Republic	2 637			Israel	221		
Chad		2 433		Italy	2 361	353	15
Chile	1 576	1 565	99	Jamaica	82	80	98
China	214 462	210 096	98	Japan	11 935	4 003	34
China, Hong Kong SAR		1 566		Jordan	110	110	100
China, Macao SAR	226			Kazakhstan	6 180	3 519	57
Colombia	6 969	562	8	Kenya	24 029	21 823	91
Comoros	94			Kiribati	50	52	104
Congo	2 044			Kuwait	185		
Cook Islands	1			Kyrgyzstan	830	830	100
Costa Rica	562	0	0	Lao PDR	1 508		
Côte d'Ivoire	9 850	9 569	97	Latvia	668	619	93
Croatia	1 129			Lebanon	245	224	91
Cuba	744	739	99	Lesotho	2 476		
Cyprus	6	15	250	Liberia	1 190		
Czech Republic	545	548	101	Libyan Arab Jamahiriya		699	
Denmark	132			Lithuania	787	787	100

continued...

Comparison of smear-positive cases notified in 1998 and registered for treatment in 1998, cont'd

	Number of cases		% of notified registered		Number of cases		% of notified registered
	notified	registered			notified	registered	
Luxembourg	24			Senegal	5 454	5 454	100
Madagascar	9 639			Seychelles	10		
Malawi	8 853	8 824	100	Sierra Leone	2 262		
Malaysia	7 802			Singapore	480		
Maldives	88	88	100	Slovakia	303	304	100
Mali	2 558	1 381	54	Slovenia	157	158	101
Malta	6	6	100	Solomon Islands	140	138	99
Marshall Islands	11	12	109	Somalia	3 121	2 635	84
Mauritania				South Africa	82 293	37 089	45
Mauritius	108	105	97	Spain	1 906		
Mexico	11 473	11 473	100	Sri Lanka	3 747	3 761	100
Micronesia	28			St Vincent & Grenadines	3		
Monaco				St. Helena			
Mongolia	1 356	1 356	100	Sudan	10 791	10 791	100
Montserrat	0	2		Suriname		46	
Morocco	13 426	13 426	100	Swaziland			
Mozambique	12 116			Sweden	97		
Myanmar	10 089	10 313	102	Switzerland	165		
Namibia	3 490	3 592	103	Syrian Arab Republic	1 593	748	47
Nauru				Tajikistan	435		
Nepal	11 306	11 673	103	TFYR Macedonia	179	179	100
Netherlands	254	293	115	Thailand	7 962	7 962	100
Netherlands Antilles				Togo	932		
New Caledonia				Tokelau		0	
New Zealand	81			Tonga	16	16	100
Nicaragua	1 648	1 653	100	Trinidad and Tobago	98	83	85
Niger	2 127			Tunisia	1 196	1 099	92
Nigeria	13 161	13 161	100	Turkey	3 692	22 509	610
Niue				Turkmenistan	790		
Northern Mariana Is	26	110	423	Turks & Caicos Islands		7	
Norway	49	49	100	Tuvalu			
Oman	109	109	100	Uganda	18 222	13 236	73
Pakistan	14 974	29 388	196	Ukraine	10 586		
Palau		20		United Arab Emirates			
Panama	1 393	669	48	United Kingdom	1 342		
Papua New Guinea	2 107	4 798	228	UR Tanzania	23 726	23 726	100
Paraguay	850	850	100	Uruguay	374	379	101
Peru	27 707	26 137	94	US Virgin Islands			
Philippines	71 663	20 683	29	USA	6 630	6 630	100
Poland	3 502	122	3	Uzbekistan	3 504	74	2
Portugal	2 016	1 948	97	Vanuatu	38		
Puerto Rico	105	107	102	Venezuela	3 450	3 305	96
Qatar	68	68	100	Viet Nam	54 873	54 551	99
Rep. Korea	10 359			Wallis & Futuna Is			
Republic of Moldova	477			West Bank and Gaza	8		
Romania	10 841	10 921	101	Yemen	4 896		
Russian Federation	42 219	745	2	Yugoslavia	1 873		
Rwanda	4 417	5 156	117	Zambia			
Saint Kitts and Nevis	3	4	133	Zimbabwe	14 492	12 748	88
Saint Lucia	12	17	142				
Samoa	7	7	100				
San Marino	0	0					
Sao Tome and Principe							
Saudi Arabia	1 644	1 665	101				

ANNEX 7

**Changes in treatment success
and DOTS detection rate
1995–1999**

DOTS treatment success and detection rates, 1995-99

	DOTS treatment success					DOTS detection rate				
	1994	1995	1996	1997	1998	1995	1996	1997	1998	1999
Afghanistan				45	33			2	6	5
Albania										
Algeria			86					132		
American Samoa		100			50			59		29
Andorra					100			213	12	37
Angola				15	68			62	39	62
Anguilla										
Antigua & Barbuda										
Argentina					55			4	6	18
Armenia		83	77	82	81	14	31	51	48	42
Australia				66	75				17	23
Austria										
Azerbaijan			86	87	86	5	9	7	8	9
Bahamas					72					43
Bahrain					13					64
Bangladesh	73	71	72	78	80	7	15	19	24	25
Barbados										11
Belarus										
Belgium										
Belize		52					41	100		
Benin	76	73	72	73	77	32	31	31	30	31
Bermuda										
Bhutan	71	97	96	85	90	28	24	22	21	24
Bolivia	66	62	71	77	62	39	78	73	77	77
Bosnia & Herzegovina				93	88				35	52
Botswana	72	67	70	70	47	67	75	69	71	65
Brazil					91				4	4
British Virgin Is										
Brunei Darussalam										
Bulgaria										
Burkina Faso		25	29	57	59	6	10	8	9	9
Burundi	44	45		67	74	16	19	23	14	28
Cambodia	84	91	94	91	95	48	40	50	53	57
Cameroon					75		2		5	10
Canada										
Cape Verde							43	36		
Cayman Islands										
Central African Rep		37					45	46		
Chad	63	47			64	28	11			33
Chile	83	79	80	77	83	79	75	80	86	85
China	94	96	96	96	97	16	24	25	33	32
China, Hong Kong SAR					85					56
China, Macao SAR	75			81		33	47	68	50	
Colombia					74				72	30
Comoros	94	90		85		60	62		50	
Congo	69					79			58	
Cook Islands				50					32	
Costa Rica										30
Côte d'Ivoire	17	68	56	61	62	48	48	46	46	44
Croatia										
Cuba	86	90	92	90	94	82	89	87	91	95
Cyprus					42				26	85
Czech Republic	73	60	66	69	65	51	63	53	61	51
Denmark										
Djibouti		76	77	76	79		87	93	83	77
Dominica			100					91	51	
Dominican Rep										7
DPR Korea					91					2
DR Congo	71	80	48	64	70	44	50	47	57	53
Ecuador				43				1	18	26

continued...

DOTS treatment success and detection rates, 1995-99, cont'd

	DOTS treatment success					DOTS detection rate				
	1994	1995	1996	1997	1998	1995	1996	1997	1998	1999
Egypt	52		81	82	87	38	0	9	14	25
El Salvador					77			45	52	55
Equatorial Guinea	89	89	77	82		56	51	52	63	
Eritrea				83	73			3	6	12
Estonia										
Ethiopia	74	61	73	72	74	14	19	20	22	22
Fiji	90	86		87	90	51	52	50	57	50
Finland										
France										
French Polynesia		67	95	100	74		100	111	92	90
Gabon										
Gambia	74	76	80	70		67	60	63	65	
Georgia		58		65	78	15	32		35	46
Germany										
Ghana		54	51	48	59	13	12	26	25	23
Greece										
Grenada										
Guam										
Guatemala	62	61	81	73	79	44	59	56	55	54
Guinea	78	78	75	74	73	38	44	42	44	43
Guinea-Bissau										
Guyana										
Haiti				73	79			2	12	24
Honduras					93				2	15
Hungary					80					36
Iceland										
India	83	79	79	82	84	0	1	1	2	6
Indonesia	94	91	81	54	58	1	5	8	12	19
Iran			87	84	83	30		8	21	31
Iraq					83				2	5
Ireland										
Israel								98	106	83
Italy		80	82	69	72		14	9	13	54
Jamaica		67	72	79	89		85	81	91	105
Japan										
Jordan	90				92	56			35	33
Kazakhstan					79				4	73
Kenya	73	75	77	65	77	58	58	54	57	53
Kiribati					83			34	156	182
Kuwait										
Kyrgyzstan			88	76	82		4	4	36	60
Lao PDR		70	55	62			24	33	38	
Latvia		61	64	65	71		70	69	66	52
Lebanon	89				73	47				72
Lesotho	56	47	71	63		45	53	64	60	
Liberia		79		75			27		38	
Libyan Arab Jamahiriya					68					134
Lithuania					79					2
Luxembourg										
Madagascar	51	55		64		64	74		66	
Malawi	22	71	68	71	69	40	40	44	48	42
Malaysia		69				66	70			
Maldives	95	97	93	95	94	93	95	93	97	107
Mali	68	59	65	62	70	19	21	22	21	19
Malta		100	100	100	100		35	22	44	69
Marshall Islands					83				46	69
Mauritania										50
Mauritius	96				91	42			32	34
Mexico			75	65	78			15	29	38
Micronesia	64	80				16	23			

continued...

DOTS treatment success and detection rates, 1995-99, cont'd

	DOTS treatment success					DOTS detection rate				
	1994	1995	1996	1997	1998	1995	1996	1997	1998	1999
Monaco										
Mongolia	59	78	78	86	84	7	31	30	51	63
Montserrat										
Morocco	86	90	88	83	82	98	98	96	91	90
Mozambique	67	39	54	67		49	44	42	41	
Myanmar		66	79	82	82		26	27	30	33
Namibia			54	58	60	31	113	97	114	105
Nauru										
Nepal			85	87	89		5	11	16	44
Netherlands	81	72	81	80	65	71	44	40	36	40
Netherlands Antilles										
New Caledonia	62	75				33	33			
New Zealand										
Nicaragua	81	80	79	81	82	77	85	84	84	80
Niger			57	66				12	10	
Nigeria	65	49	32	73	73	8	13	9	10	11
Niue										
Northern Mariana Is										
Norway		77	80	44	69		88	89	45	20
Oman		84	87	91	86		71	87	87	106
Pakistan	74	70		67	66	1	2		4	2
Palau	64	67	75			129	56	97		
Panama				51	51				13	9
Papua New Guinea		60		93	72		4	1	8	5
Paraguay	46	51				13	54			
Peru	81	83	89	90	92	99	88	95	101	95
Philippines	80		82	83	84	0	1	3	10	20
Poland					75				2	3
Portugal	48	69	74	78	74	79	78	67	84	77
Puerto Rico		65	68	68	68		68	81	70	74
Qatar	83	81	72	79	84	105	74	65	109	88
Rep. Korea	71	76	71	82		27	58	56	65	
Republic of Moldova										
Romania				72	85				86	4
Russian Federation		65	62	67	68		0	1	1	2
Rwanda			61	68	72	30	29	35	45	37
Saint Kitts and Nevis					25				133	42
Saint Lucia				67	82			89	90	63
Samoa	50	80	100		86	51	35	49		60
San Marino				100				103		
Sao Tome & Principe										
Saudi Arabia					57					22
Senegal	35	39	41	52	48	63	65	56	54	48
Seychelles		89	100	100			72	85	75	
Sierra Leone	76	69	74	79		32	47	45	42	
Singapore	88	86				63	28			
Slovakia	96	64	73	67	85	76	82	34	40	36
Slovenia		90	87	82	78		78	58	62	68
Solomon Islands		65	73	92	92		57	70	85	55
Somalia		86	84	90	88		16	21	20	22
South Africa			69	73	74			6	22	68
Spain										
Sri Lanka	77	79	80	77	76	61	59	71	76	76
St Vincent & Grenadines				86					17	
St. Helena										
Sudan					65		2	1	31	32
Suriname								18		
Swaziland										
Sweden										
Switzerland										

continued...

DOTS treatment success and detection rates, 1995-99, cont'd

	DOTS treatment success					DOTS detection rate				
	1994	1995	1996	1997	1998	1995	1996	1997	1998	1999
Syrian Arab Republic			92	88	88			5	13	17
Tajikistan										
TFYR Macedonia										
Thailand			78	62	68		0	5	21	40
Togo	45	60	65	64		18	18		16	
Tokelau										
Tonga	89	75	82	75	94	53	96	74	100	64
Trinidad and Tobago					65					123
Tunisia					91					79
Turkey										
Turkmenistan										
Turks & Caicos Islands					71					109
Tuvalu										
Uganda			33	40	62			63	63	59
Ukraine										
United Arab Emirates										
United Kingdom										
UR Tanzania	80	73	76	77	76	61	60	56	55	51
Uruguay	83	68	80	77	84	74	92	94	85	91
US Virgin Islands		50					97			
USA		72	71	72	72		87	86	89	90
Uzbekistan					78				0	2
Vanuatu	100					44				33
Venezuela	68	74	80	72	81	73	75	75	79	82
Viet Nam	91	91	90	85	93	30	59	77	81	80
Wallis & Futuna Is										
West Bank & Gaza										
Yemen			76	81			9	30	36	
Yugoslavia										
Zambia										
Zimbabwe					70				60	55

ANNEX 8

Global profile (updated)

This **Global profile** is an updated version of the **1999 Global profile** published in *Global TB Control WHO Report 2000*.

The most recent case notifications and treatment outcomes data on TB are in Annex 2.

Global profile: case notification and detection rates, 1998

Region*	Population			All cases			New smear-positive cases (ss+)				
	Number	%	a/sum(a)	Notified			Notified			Estimated	
				Number	rate	%	Number	rate	%	Number	% of est detected
	a			b	b/a	b/sum(b)	c	c/a	d	e	c/e
DOTS	370 847 041	60	503 451	136	77	75	253 162	75	63		
non-DOTS	217 372 201	35	151 106	70	23	25	86 181	25	72		
No Report	13 570 310	2.2									
AFR	616 441 115	98	654 557	106	100	100	339 343	100		794 629	43
DOTS	476 547 280	59	117 596	25	48	52	70 271	52	74		
non-DOTS	298 846 959	37	129 436	43	52	48	65 007	48	62		
No Report	31 687 596	3.9									
AMR	807 081 834	100	247 032	31	100	100	135 278	100		181 305	75
DOTS	157 056 621	33	79 133	50	34	55	41 298	55	76		
non-DOTS	317 623 545	67	155 909	49	66	45	33 584	45	26		
No Report											
EMR	474 680 166	100	235 042	50	100	100	74 882	100		273 581	27
DOTS	115 618 760	13	55 853	48	16	17	18 957	17	48		
non-DOTS	695 825 810	80	287 921	41	84	83	92 414	83	36		
No Report	58 683 488										
EUR	870 128 058	93	343 774	40	100	100	111 371	100		202 937	55
DOTS	435 585 190	29	168 844	39	13	27	103 498	27	69		
non-DOTS	1 049 470 804	71	1 138 331	108	87	73	284 450	73			
No Report											
SEAR	1 485 055 994	100	1 307 175	88	100	100	387 948	100		1 335 882	29
DOTS	961 549 570	58	495 903	52	59	72	282 746	72	62		
non-DOTS	696 675 502	42	343 116	49	41	28	108 599	28	36		
No Report	791 496	0.0									
WPR	1 659 016 570	100	839 019	51	100	100	391 345	100		839 126	47
DOTS	2 517 204 462	43	1 420 780	56	39	53	769 932	53	64		
non-DOTS	3 275 814 821	56	2 205 819	67	61	47	670 235	47	73		
No Report	104 732 890	1.8									
Global	5 897 752 173	100	3 626 599	61	100	100	1 440 167	100		3 627 460	40

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

Global profile, cont'd: treatment success for the 1997 cohort

Region*	New smear-positive cases										Re-treatment cases									
	Registered	% cured	% completed	% died	% failed	% default	% trans-ferred	% not eval	% success	Registered	% cured	% completed	% died	% failed	% default	% trans-ferred	% not eval	% success		
AFR	DOTS	188 602	51	11	6.5	1.4	12	5.7	12	63	15 348	46	10	7.7	2.5	11	5	18	56	
	non-DOTS	77 887	57	12	7.1	1.8	16	4.5	2.2	69										
AMR	DOTS	54 042	74	6.4	4.3	1.0	5.8	2.1	6.5	80	1 588	38	21	5.3	2.8	10	5.8	17	59	
	non-DOTS	70 750	16	25	3.0	0.6	7.9	2.8	44	41										
EMR	DOTS	36 251	65	13	2.9	1.8	11	4.9	2.6	77	4 036	54	11	6.8	5.3	16	5.8	1.4	65	
	non-DOTS	23 456	51	13	1.8	3.8	15	4.3	11	64										
EUR	DOTS	15 276	56	17	5.0	6.7	10	1.8	3.1	73	6 463	50	22	5.0	3.1	6.3	1.4	12	72	
	non-DOTS	7 329	63	10	3.9	8.2	5.3	1.5	8.5	73										
SEAR	DOTS	71 475	66	6.2	3.4	1.4	7.3	2.2	14	72	6 248	59	7.7	6.2	4.2	12	4.1	6.9	66	
	non-DOTS	304 995	2.9	16	0.1	0.1	1.3	0.3	79	19										
WPR	DOTS	242 818	92	1.1	1.7	1.1	1.2	1.1	2.1	93	5 921	73	5.4	3.8	3.9	2.4	2.4	9.2	78	
	non-DOTS	50 693	77	4.0	1.6	4.0	6.0	2.6	5.2	81										
Global	DOTS	608 464	72	6.4	3.8	1.4	6.4	3.0	6.9	78	39 604	53	11	6.2	3.4	9.6	4.0	12	65	
	non-DOTS	535 110	22	16	1.8	1.0	5.4	1.6	5.2	38										

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

Global profile, cont'd: WHO TB control categories, 1998

Region*	Number		Number of countries in each category							% regional population in each category**				
	Countries	Reports	0	1	2	3	4	5	0	1	2	3	4	5
AFR	47	41	6	5	1	11	24	0	2	7.0	1.1	54	35	0.0
AMR	44	34	10	8	5	6	13	2	3.9	2.5	23	20	51	0.0
EMR	23	23	0	8	1	8	6	0	0.0	9.2	31	52	8	0.0
EUR	51	50	1	24	4	4	14	4	6.7	47	26	8	10	1.9
SEAR	10	10	0	1	1	5	3	0	0.0	1.6	66	31	1.4	0.0
WPR	36	28	8	10	1	6	10	1	0.0	10	0.3	82	8.4	0.2
Global	211	186	25	56	13	40	70	7	1.8	12	26.3	44	15	0.3

* WHO Regions (see Regional profiles for countries/territories in each region): AFR - Africa, AMR - the Americas, EMR - the Eastern Mediterranean, EUR - Europe, SEAR - South-East Asia, WPR - the Western Pacific

** Percent of regional population in each category: each country is assigned to only one of the above categories. This is in contrast to the case notification and detection rates table (page 54), where the population of any country can be divided into DOTS and non-DOTS areas.

**The tuberculosis epidemic is
growing larger and more dangerous each year.
The World Health Organization's programme on
Communicable Diseases monitors this epidemic, analyzing
data from national control programmes and providing
feedback on trends in the disease and
progress in its control.**



**If you would like further information
about tuberculosis or other communicable diseases,
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or write to:**

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Communicable Diseases
World Health Organization
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CH-1211 Geneva 27, Switzerland**

You can also visit our website at <http://www.who.int/health-topics/tb.htm>