

Summary

The World Health Organization (WHO) has published an annual report on global control of tuberculosis (TB) every year since 1997. The main purpose of the report is to provide a comprehensive and up-to-date assessment of the TB epidemic and progress made in TB care and control at global, regional and country levels. Progress towards global targets set for 2015 is given particular attention. The target included in the Millennium Development Goals (MDGs) is that TB incidence should be falling by 2015. The Stop TB Partnership has set two additional targets, which are to halve rates of prevalence and mortality by 2015 compared with their levels in 1990. Collectively, the WHO's Stop TB Strategy and the Stop TB Partnership's Global Plan to Stop TB have set out how the 2015 targets can be achieved.

This fifteenth annual report¹ contains more up-to-date information than any previous report in the series, following earlier data collection and the completion of the production cycle within a calendar year.

The estimates of the global burden of disease caused by TB in 2009 are as follows: 9.4 million incident cases (range, 8.9 million–9.9 million), 14 million prevalent cases (range, 12 million–16 million), 1.3 million deaths among HIV-negative people (range, 1.2 million–1.5 million) and 0.38 million deaths among HIV-positive people (range, 0.32 million–0.45 million). Most cases were in the South-East Asia, African and Western Pacific regions (35%, 30% and 20%, respectively). An estimated 11–13% of incident cases were HIV-positive; the African Region accounted for approximately 80% of these cases.

There were 5.8 million notified cases of TB in 2009, equivalent to a case detection rate (CDR, defined as the proportion of incident cases that were notified) of 63% (range, 60–67%), up from 61% in 2008. Of the 2.6 million patients with sputum smear-positive pulmonary TB in the 2008 cohort, 86% were successfully treated.

New and compelling data from 15 countries show that efforts by national TB programmes (NTPs) to engage all care providers in TB control (termed public-private mix, or PPM) can be a particularly effective way to increase the CDR. In areas where PPM was implemented, non-NTP providers accounted for around one-fifth to one-third of total notifications in 2009.

In 2009, 26% of TB patients knew their HIV status (up from 22% in 2008), including 53% of patients in the African Region. A total of 300 000 HIV-positive TB patients were enrolled on co-trimoxazole preventive therapy, and almost 140 000 were enrolled on antiretroviral therapy (75% and 37% respectively of those who

tested HIV-positive). To prevent TB, almost 80 000 people living with HIV were provided with isoniazid preventive therapy. This is an increase from previous years, but still represents less than 1% of the estimated number of people living with HIV worldwide.

Among TB patients notified in 2009, an estimated 250 000 (range, 230 000–270 000) had multidrug-resistant TB (MDR-TB). Of these, slightly more than 30 000 (12%) were diagnosed with MDR-TB and notified. Diagnosis and treatment of MDR-TB need to be rapidly expanded.

Funding for TB control continues to increase and will reach almost US\$ 5 billion in 2011. There is considerable variation in what countries spend on a per patient basis (<US\$ 100 to >US\$ 1000), and the extent to which countries rely on domestic or external sources of funds. Compared with the funding requirements estimated in the Global Plan, the funding gap is approximately US\$ 1 billion in 2011. Given the scale-up of interventions set out in the plan, this could increase to US\$ 3 billion by 2015 without intensified efforts to mobilize more resources.

Incidence rates are falling globally and in five of WHO's six regions (the exception is the South-East Asia Region, where the incidence rate is stable). If these trends are sustained, the MDG target will be achieved. Mortality rates at global level fell by around 35% between 1990 and 2009, and the target of a 50% reduction by 2015 could be achieved if the current rate of decline is sustained. At the regional level, the mortality target could be achieved in five of WHO's six regions; the exception is the African Region (although rates of mortality are falling). Prevalence is falling globally and in all six WHO regions. The target of halving the 1990 prevalence rate by 2015 appears out of reach at global level, but could be achieved in three of six regions: the Region of the Americas, the Eastern Mediterranean Region and the Western Pacific Region.

Reductions in the burden of disease achieved to date follow 15 years of intensive efforts to improve TB care and control. Between 1995 and 2009, a total of 41 million TB patients were successfully treated in DOTS programmes, and up to 6 million lives were saved including 2 million among women and children. Looking forwards, the Stop TB Partnership launched an updated version of the Global Plan to Stop TB in October 2010, for the years 2011–2015. In the five years that remain until the target year of 2015, intensified efforts are needed to plan, finance and implement the Stop TB Strategy, according to the updated targets included in this plan. This could save at least one million lives per year.

¹ Two reports were published in 2009. The [INTRODUCTION](#) and [METHODS](#) sections of this report explain why this was necessary.

BOX 6

Moving away from estimates of the case detection rate for sputum smear-positive pulmonary TB

In 1991, the World Health Assembly set two global targets for TB control: to achieve a case detection rate (CDR) of $\geq 70\%$ for new sputum smear-positive cases of pulmonary TB, and to successfully treat 85% of these cases. The targets were originally set for the year 2000, and later reset to 2005. The CDR is defined as the number of new cases of sputum smear-positive pulmonary TB notified to NTPs, divided by the estimated number of incident cases of sputum smear-positive pulmonary TB that occurred in the same year. Particular attention was given to detecting and curing people with sputum smear-positive pulmonary TB because they are the most infectious – and thus the most likely, without proper treatment, to cause further transmission of TB in the population.

The Assembly's targets galvanized efforts to improve TB control at global and country levels. From 1995 onwards, the DOTS strategy emphasized the detection and treatment of sputum smear-positive cases of pulmonary TB, and monitoring of progress towards both targets was given a (justifiably) high profile at global and country levels. All annual reports on global TB control published by WHO from 1997 to 2009 included estimates of the CDR for sputum smear-positive cases of pulmonary TB.¹

For the first time, this report does not include estimates of the CDR for sputum smear-positive pulmonary TB. Instead, estimates of the CDR for all forms of TB are presented.² The CDR for all forms of TB is defined as the total number of new cases notified to NTPs (shown in TABLE 2) divided by the total number of estimated incident cases of TB (shown in TABLE 1).

There are several reasons for this change. NTPs in all countries are diagnosing, notifying and treating people with all forms of TB, not just those with sputum smear-positive TB (TABLE 2). The Stop TB Strategy (BOX 4), launched in 2006, emphasizes the detection and treatment of people with *all forms* of TB. The 2015 global targets set within the context of the MDGs and by the Stop TB Partnership (BOX 3), which are now the focus

of national and international efforts to control TB, are defined in terms of reductions in the disease burden (incidence, prevalence and mortality) caused by all forms of TB. The CDR indicator included in the MDG framework is the CDR for all TB cases (BOX 3). Laboratory capacity to diagnose smear-negative culture-positive cases of pulmonary TB is increasing, in line with WHO recommendations to improve bacteriological diagnosis of TB using both smear and culture. Further reasons are the results and recommendations arising from a review and associated updating of the methods used to estimate disease burden (ANNEX 1), conducted between June 2008 and October 2009 by an expert group convened by the WHO Global Task Force on TB Impact Measurement. Among other findings, this review identified reasons why estimating the CDR for sputum smear-positive TB is more difficult than previously thought, compared with the CDR for all forms of TB.³

If estimates of the CDR for smear-positive TB are needed for reporting purposes, there are two options. The first is to assume that the smear-positive CDR is similar to the CDR for all forms of TB. If this is not satisfactory, countries and/or international agencies should contact WHO and requests for separate estimates of the CDR for smear-positive TB will be handled on a case-by-case basis.

It should be emphasized that the standard of care for TB diagnosis recommended by WHO is (i) sputum smear microscopy for *all cases* and (ii) expansion of the use of culture to diagnose all bacteriologically-positive (not just smear-positive) cases, towards the ultimate goal of using culture (or equivalents such as molecular tests) in the diagnosis of all cases.

¹ In the global report published in December 2009, the CDR for smear-positive cases was estimated as 56–68%, with a best estimate of 62%. New cases include relapse cases.

² i.e. smear-positive and smear-negative cases of pulmonary TB, and extrapulmonary cases.

³ A systematic review of the proportion of all TB cases with sputum smear-positive TB is of particular relevance, and is discussed in section 3.6 of ANNEX 1.