

# GLOBAL TUBERCULOSIS REPORT 2014



World Health  
Organization

# Executive summary

Tuberculosis (TB) remains one of the world's deadliest communicable diseases. In 2013, an estimated 9.0 million people developed TB and 1.5 million died from the disease, 360 000 of whom were HIV-positive. TB is slowly declining each year and it is estimated that 37 million lives were saved between 2000 and 2013 through effective diagnosis and treatment. However, given that most deaths from TB are preventable, the death toll from the disease is still unacceptably high and efforts to combat it must be accelerated if 2015 global targets, set within the context of the Millennium Development Goals (MDGs), are to be met.

TB is present in all regions of the world and the *Global Tuberculosis Report 2014* includes data compiled from 202 countries and territories. This year's report shows higher global totals for new TB cases and deaths in 2013 than previously, reflecting use of increased and improved national data.

A special supplement to the 2014 report highlights the progress that has been made in surveillance of drug-resistant TB over the last two decades, and the response at global and national levels in recent years. Worldwide, the proportion of new cases with multidrug-resistant TB (MDR-TB) was 3.5% in 2013 and has not changed compared with recent years. However, much higher levels of resistance and poor treatment outcomes are of major concern in some parts of the world. The supplement, *Drug Resistant TB: Surveillance and Response*, defines priority actions needed, from prevention to cure.

## Burden of disease and progress towards 2015 global targets

Improved data give a clearer global picture of TB burden; an acceleration in current rates of decline is needed to meet all targets.

- The data available to estimate TB disease burden continue to improve. In 2013, direct measurements of TB mortality were available from 126 countries and since 2009 there has been an unprecedented increase in the number of direct measurements of TB prevalence from nationwide population-based surveys. Survey results were finalized for five new countries in 2013: Gambia, Lao PDR, Nigeria, Pakistan and Rwanda. When new data become available they can affect global TB estimates for the current year and retrospectively.<sup>1</sup>

- Of the estimated 9 million people who developed TB in 2013, more than half (56%) were in the South-East Asia and Western Pacific Regions. A further one quarter were in the African Region, which also had the highest rates of cases and deaths relative to population. India and China alone accounted for 24% and 11% of total cases, respectively.
- About 60% of TB cases and deaths occur among men, but the burden of disease among women is also high. In 2013, an estimated 510 000 women died as a result of TB, more than one third of whom were HIV-positive. There were 80 000 deaths from TB among HIV-negative children in the same year.
- An estimated 1.1 million (13%) of the 9 million people who developed TB in 2013 were HIV-positive. The number of people dying from HIV-associated TB has been falling for almost a decade. The African Region accounts for about four out of every five HIV-positive TB cases and TB deaths among people who were HIV-positive.
- The 2015 Millennium Development Goal (MDG) of halting and reversing TB incidence has been achieved globally, in all six WHO regions and in most of the 22 high TB burden countries (HBCs). Worldwide, TB incidence fell at an average rate of about 1.5% per year between 2000 and 2013.
- Globally, the TB mortality rate fell by an estimated 45% between 1990 and 2013 and the TB prevalence rate fell by 41% during the same period. Progress needs to accelerate to reach the Stop TB Partnership targets of a 50% reduction by 2015.
- Two out of six WHO regions have achieved all three 2015 targets for reductions in TB disease burden (incidence, prevalence, mortality): the Region of the Americas and the Western Pacific Region. The South-East Asia Region appears on track to meet all three targets. Incidence, prevalence and mortality rates are all falling in the African, Eastern Mediterranean and European Regions but not fast enough to meet targets.

<sup>1</sup> Currently WHO produces estimates back to 1990 since this is the baseline year for 2015 global targets for TB mortality and prevalence.

## TB detection and treatment outcomes

The treatment success rate among new cases of TB continues to be high, but major efforts are needed to ensure all cases are detected, notified and treated.

- In 2013, 6.1 million TB cases were reported to WHO. Of these, 5.7 million were people newly diagnosed and another 0.4 million were already on treatment.
- Notification of TB cases has stabilized in recent years. In 2013, about 64% of the estimated 9 million people who developed TB were notified as newly diagnosed cases. This is estimated to have left about 3 million cases that were either not diagnosed, or diagnosed but not reported to national TB programmes (NTPs). Major efforts are needed to close this gap.
- In 2013, the treatment success rate continued to be high at 86% among all new TB cases.
- Although treatment success rates in the European Region have improved since 2011, they were still below average in 2012 at 75%.

## MDR-TB detection and treatment outcomes

Increased use of new diagnostics is ensuring that significantly more TB patients are correctly diagnosed, but major treatment gaps remain and funding is insufficient.

- Globally, 3.5% of new and 20.5% of previously treated TB cases were estimated to have had MDR-TB in 2013. This translates into an estimated 480 000 people having developed MDR-TB in 2013.
- On average, an estimated 9.0% of patients with MDR-TB had extensively drug resistant TB (XDR-TB).
- If all notified TB patients (6.1 million, new and previously treated) had been tested for drug resistance in 2013, an estimated 300 000 cases of MDR-TB would have been detected, more than half of these in three countries alone: India, China and the Russian Federation.
- In 2013, 136 000 of the estimated 300 000 MDR-TB patients who could have been detected were diagnosed and notified. This was equivalent to almost one in two (45%), and up from one in six in 2009. Progress in the detection of drug-resistant TB has been facilitated by the use of new rapid diagnostics.
- A total of 97 000 patients were started on MDR-TB treatment in 2013, a three-fold increase compared with 2009. However, 39 000 patients (plus an unknown number detected in previous years) were on waiting lists, and the gap between diagnosis and treatment widened between 2012 and 2013 in several countries.
- The most recent treatment outcome data are for patients started on MDR-TB treatment in 2011. Globally the success rate was 48%. Five of the 27 high MDR-TB burden countries achieved a treatment success rate of

≥70%: Ethiopia, Kazakhstan, Myanmar, Pakistan and Viet Nam. Health system weaknesses, lack of effective regimens and other treatment challenges are responsible for unacceptably low cure rates, and the MDR-TB response is seriously hampered by insufficient funding. These barriers must be urgently addressed.

- Five priority actions – from prevention to cure – are needed to address the MDR-TB epidemic. These are: 1) high-quality treatment of drug-susceptible TB to prevent MDR-TB; 2) expansion of rapid testing and detection of MDR-TB cases; 3) immediate access to quality care; 4) infection control; and 5) increased political commitment, including adequate funding for current interventions as well as research to develop new diagnostics, drugs and treatment regimens.

## TB diagnostics and laboratory strengthening

The successful roll out of new diagnostics is ensuring more TB cases are correctly diagnosed and treated.

- Laboratory confirmation of TB and drug resistance is key to ensuring that individuals with TB signs and symptoms are correctly diagnosed and treated. In 2013, 58% of the 4.9 million pulmonary TB patients notified globally were bacteriologically confirmed via a WHO-recommended test, including rapid tests such as Xpert MTB/RIF.
- By June 2014, 108 countries with access to Xpert MTB/RIF at concessional prices had started to use the technology, and more than one million test cartridges were being procured each quarter.
- In late 2013, WHO expanded its recommendations on the use of Xpert MTB/RIF to include the diagnosis of TB in children and some forms of extrapulmonary TB.

## Addressing the co-epidemics of TB and HIV

There has been continued progress in the implementation of collaborative TB/HIV activities but intensified efforts are needed, especially to ensure universal access to antiretroviral therapy (ART).

- The first key intervention for reducing the burden of HIV-associated TB is HIV testing for TB patients. In 2013, 48% of TB patients globally had a documented HIV test result, but progress in increasing coverage has slowed. In the African Region, 76% of TB patients knew their HIV status.
- The most important intervention to reduce mortality among HIV-positive TB patients is ART. In 2013, 70% of TB patients known to be HIV-positive were on ART. This level, however, falls short of the 100% target set for 2015.

- Besides early initiation of ART, the main intervention to prevent TB in people living with HIV is isoniazid preventive therapy (IPT). In 2013, only 21% of countries globally and 14 of the 41 high TB/HIV burden countries reported provision of IPT to people living with HIV.

## TB Financing

Despite substantial growth in funding for TB prevention, diagnosis and treatment since 2002, an annual gap of around US\$ 2 billion still needs to be filled.

- An estimated US\$ 8 billion per year is required to ensure a full response to the global TB epidemic: about two thirds for detection and treatment of drug susceptible TB; 20% for treatment of MDR-TB; 10% for rapid diagnostic tests and associated laboratory testing; and 5% for collaborative TB/HIV activities. The amount excludes resources required for research and development for new TB diagnostics, drugs and vaccines, which is estimated at about US\$ 2 billion per year.
- Based on reports to WHO from the 122 countries that account for 95% of reported TB cases, funding for TB prevention, diagnosis and treatment reached a total of US\$ 6.3 billion in 2014. This left a gap of almost US\$ 2 billion per year compared with the required total of US\$ 8 billion.
- Brazil, the Russian Federation, India, China and South Africa (BRICS), which collectively account for almost 50% of global TB cases, are in a position to mobilize all or a large share of their required funding from domestic sources. International donor funding remains critical for many other countries. For example, in the group of 17 HBCs excluding BRICS, international donor funding accounted for more than 50% of total funding in 2014. In several countries, more than 90% of the funding available in 2014 was from international donor sources. The Global Fund and the US government are the two main sources of international donor funding.
- The cost per patient treated for drug-susceptible TB in 2013 was in the range of US\$ 100–US\$ 500 in most countries with a high burden of TB. The cost per patient treated for MDR-TB ranged from an average of US\$ 9 235 in low-income countries to US\$ 48 553 in upper middle-income countries.

## TB Research and Development

New tools are emerging from the pipeline but much more investment is required.

- Many new diagnostic technologies are under development or are available on the market, but the funding required to rapidly evaluate whether these tests are accurate and ready for implementation is far from adequate.
- There are 10 new or repurposed anti-TB drugs currently in the late phases of clinical development and, in the last two years, two new drugs have been approved for the treatment of MDR-TB under specific conditions: bedaquiline and delamanid.
- Trials of four-month treatment regimens for drug-susceptible TB found that they were inferior to the six-month standard of care regimen currently recommended by WHO. However, a series of new combination regimens are currently being tested and show encouraging prospects for treatment of both drug-susceptible and drug-resistant TB.
- There are currently 15 vaccine candidates in clinical trials.

## Beyond 2015

- The end of 2015 marks a transition from the MDGs to a post-2015 development framework. Within this broader context, WHO has developed a post-2015 global TB strategy (the End TB Strategy) that was approved by all Member States at the May 2014 World Health Assembly.
- The overall goal of the strategy is to end the global TB epidemic, with corresponding 2035 targets of a 95% reduction in TB deaths and a 90% reduction in TB incidence (both compared with 2015). The strategy also includes a target of zero catastrophic costs for TB-affected families by 2020.