

Editorial

# What would it take to eliminate tuberculosis in the Eastern Mediterranean Region?

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Twenty-five years ago, tuberculosis (TB) was declared a global health emergency by the World Health Organization (WHO) (1). However, TB still remained one of the top 10 causes of death worldwide in 2015 (2). In 2014, the World Health Assembly (WHA) had approved a new global strategy to end TB that builds on successes achieved by the DOTS and the Stop TB Strategy (3). The End TB Strategy 2016–2035 envisions a world free of TB by pursuing policies that promote prevention and care, and encourage research and innovation (4), which is in line with the Sustainable Development Goals (SDGs) calling for the TB epidemic to end by 2030 (5). In 2002, the Global Fund to fight AIDS, Tuberculosis and Malaria – a partnership between governments, civil society, private sector and patients – was launched to raise significant funds to support programmes in countries and communities most in need (6).

The Eastern Mediterranean Region (EMR) covers 22 countries, many of which are facing major humanitarian crises and significant challenges in the fight to eliminate TB in the next two decades. Following the commemoration of World TB Day on 24 March, it is important to examine key challenges and successes from the Region, and present the strategies needed to successfully eliminate TB.

In 2015, more than 10 million people globally were estimated to have developed acute TB, of whom 480 000 had drug-resistant TB (MDR-TB) and 1.4 million had died (7). In the EMR,

significant progress has been made over the last two decades, with TB mortality decreasing from 38/100 000 population in 2000 to 12/100 000 in 2015, and achieving the Stop TB target of halving the mortality rate (compared to 1990) (8). Success rate for treated patients with susceptible TB reached 91% in 2016, and 68% for MDR-TB – the highest of all WHO Regions (8). However, an estimated 749 000 TB cases (116/100 000 population) still occurred in 2016, with only 63% reported, and only 21% of MDR-TB cases detected and treated (8).

Experience in some countries shows that prevention and successful control of TB is feasible. Compared to 1990, incidence decreased drastically in 2015 in Egypt, Oman, Islamic Republic of Iran and Sudan (8). In Afghanistan, restructuring of the national TB programme and integrating TB treatment into primary health care allowed the country to achieve most of its disease control targets (9). New diagnostic tools such as Gene-Xpert and Line probe assays are increasingly used in the Region, and their use is being scaled up mainly in Pakistan to cover most hospitals by end of 2018 (10). As for planning, most countries have updated their national strategic plan (NSP) in line with SDGs and End TB Strategy. A few countries with low disease burden are targeting TB elimination, and all countries' key staff have been trained on the new MDR-TB management guidelines (8).

Three major challenges need to be highlighted in the fight to eliminate TB in the Region: suboptimal political

commitment, low case detection, and humanitarian emergencies. Although political commitment is difficult to measure, adequate human and financial resources and supportive policies can serve as indicators. The Global Fund to fight AIDS, Tuberculosis and Malaria provides significant and highly appreciated support to the 11 eligible countries. However, national TB programmes in most countries have insufficient staff, and except for the Gulf Cooperation Council countries (GCC) and Islamic Republic of Iran, policies mandating timely reporting of TB cases are either non-existent or rarely enforced (8). In 2015, only 30% of available funds for TB were from domestic sources, while 50% came from international sources, creating a high dependence on external donors, and is unsustainable (8).

In 2015, 37% of estimated TB cases were missed or not reported. Five countries are responsible for 90% of these missed cases, namely Pakistan (67%), Afghanistan (9%), Sudan (7%), Somalia (6%) and Djibouti (1%) (11). In Pakistan, the majority of missed cases (62%) resided in Punjab Province, suggesting that targeted efforts can significantly improve regional case identification rate (11). As most unreported cases are treated in the private sector, with questionable quality of drugs and regimens used, serious concerns exist about poor outcome and increased resistance.

The Region has been suffering from many conflicts and major humanitarian emergencies, resulting in breakdown of public services and infrastructure, and disruption of logistic and societal

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networks, which has significantly affected TB control. The interruption of drug supplies results in irregular drug intake by TB patients, leading to a low cure rate, high relapse rates, and increased risk of MDR-TB. The presence of many organizations providing healthcare services, including United Nations agencies and multiple non-governmental organizations, is helpful but can unfortunately result in erratic and poorly coordinated care, which is often not consistent with national guidelines and can lead to suboptimal treatment and adherence.

To meet the End TB Strategy objectives by 2030, the Region needs to reach three ambitious targets: 90% reduction in TB deaths, 80% reduction in TB incidence rate, and no affected families facing “catastrophic costs” due to TB. A regional strategic plan has been developed based on three pillars: integrated,

patient-centered care and prevention; bold policies and supportive systems; and intensified research and innovation. Midterm targets were set for 2016 – 2020, which are 40% reduction in TB deaths in each country, and 20% reduction in incidence rate. Almost all EMR countries have updated their NSPs in line with the regional plan.

To achieve the regional targets, notification should increase from 63% to 90% of all estimated cases and from 21% to 80% for MDR-TB by 2020. This could be achieved through better implementation of public/private mix, enforcing laws on obligatory notification of TB, rigorous contact investigation, and use of new diagnostic tools for early detection. The Region should also sustain a treatment success rate at 91% or higher for all TB cases, and 65% or higher for MDR-TB by 2020, while increasing the proportion of MDR-TB

treated from 78% to 100% by 2020. Major efforts are needed to ensure drug supply is available and well managed and that TB control activities are adequately implemented in complex emergencies (12,13).

Can TB in the Region be eliminated, despite all challenges? The answer remains open. In November 2017, WHO is organizing the first global ministerial conference to support a multisectoral approach to End TB, which will take place in Moscow, Russian Federation. National commitment at the highest level is essential, but with strong commitment from donors, sound implementation of strategies, and the new diagnostic techniques, the Region should be well placed to eliminate TB in 2035 and hopefully earlier.

## References

1. World Health Organization. Statement from Dr Marion Ravignone, WHO Director, Stop TB Department. Geneva: World Health Organization; 2017 ([http://www.who.int/tb/features\\_archive/mr\\_statement/en/](http://www.who.int/tb/features_archive/mr_statement/en/), accessed 26 July 2017).
2. World Health Organization. Tuberculosis fact sheet. Geneva: World Health Organization; 2017 (<http://www.who.int/mediacentre/factsheets/fs104/en/>, accessed 26 July 2017).
3. World Health Organization. Global strategy and targets for tuberculosis prevention, care and control after 2015. Geneva: World Health Organization; 2014 ([http://apps.who.int/gb/ebwha/pdf\\_files/EB134/B134\\_R4-en.pdf?ua=1](http://apps.who.int/gb/ebwha/pdf_files/EB134/B134_R4-en.pdf?ua=1), accessed 26 July 2017).
4. World Health Organization. The End TB Strategy. Geneva: World Health Organization; 2015 (<http://www.who.int/tb/strategy/end-tb/en/>, accessed 26 July 2017).
5. United Nations. Sustainable Development Goal 3: Ensure healthy lives and promote wellbeing for all at all ages. New York: United Nations; 2016 (<https://sustainabledevelopment.un.org/sdg3>, accessed 26 July 2017).
6. The Global Fund (<https://www.theglobalfund.org/en/>, accessed 26 July 2017).
7. World Health Organization. Definitions and reporting framework for tuberculosis – 2013 revision (updated December 2014). Geneva: World Health Organization; 2013 ([http://apps.who.int/iris/bitstream/10665/79199/1/9789241505345\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/79199/1/9789241505345_eng.pdf), accessed 26 July 2017).
8. World Health Organization. Global tuberculosis report 2016. Geneva: World Health Organization; 2016 ([http://www.who.int/tb/publications/global\\_report/en/](http://www.who.int/tb/publications/global_report/en/), accessed 26 July 2017).
9. Seddiq K, Enarson DA, Shah K, Zaeem H, Khan W. Implementing a successful tuberculosis programme within primary care services in a conflict area using the stop TB strategy: Afghanistan case study *Confl Health*. 2014;8:3. (<https://conflictandhealth.biomedcentral.com/articles/10.1186/1752-1505-8-3>, accessed 26 July 2017).
10. World Health Organization. Rapid diagnostic test and shorter, cheaper treatment signal new hope for multidrug-resistant tuberculosis patients. Geneva: World Health Organization; 2016 (<http://www.who.int/mediacentre/news/releases/2016/multidrug-resistant-tuberculosis/en/>, accessed 26 July 2017).
11. World Health Organization. Assessing tuberculosis under-reporting through inventory studies. Geneva: World Health Organization; 2012 ([http://www.who.int/tb/publications/inventory\\_studies/en/](http://www.who.int/tb/publications/inventory_studies/en/), accessed 26 July 2017).
12. Zignol M, Dean A, Falzon D, van Gemert W, Wright A, van Deun A, et al. Twenty years of global surveillance of anti-tuberculosis drug resistance. *N Engl J Med*. 2016;375:1081-9 (<http://www.nejm.org/doi/full/10.1056/NEJMSr1512438#t=article>, accessed 26 July 2017).
13. WHO Regional Office for the Eastern Mediterranean. Tuberculosis control in complex emergencies. Cairo: WHO Regional Office for the Eastern Mediterranean; 2015 ([http://applications.emro.who.int/dsaf/EMROPUB\\_2015\\_EN\\_1913.pdf?ua=1](http://applications.emro.who.int/dsaf/EMROPUB_2015_EN_1913.pdf?ua=1), accessed 26 July 2017).