

Operational research to strengthen tuberculosis control in the Americas

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Tuberculosis (TB) continues to be an important global health problem, despite significant progress since the declaration of TB as a global public health emergency by the World Health Organization (WHO) in 1993. Mortality has declined by 45% since then, with annual decreases of incidence and an estimated 37 million lives saved between 2000 and 2013. Countries have made a considerable effort to achieve the 2015 global targets related to TB within the context of the Millennium Development Goals (MDGs) and the Stop TB Strategy. In spite of this, an estimated 9 million people developed TB in 2013, of whom 360 000 cases were co-infected with HIV and 1.5 million died from the disease (1).

In the Region of the Americas, great progress has been made since the implementation of the Directly Observed Treatment Short Course (DOTS) Strategy in the 1990's, and then of its successor the Stop TB Strategy in 2006 (2). According to WHO estimates, TB incidence in the Region declined 48% from 1990 to 2013, while prevalence and mortality were reduced by 57% and 68% respectively during this period. This has allowed the Region as a whole to reach the MDG and linked targets before the 2015 dateline. Nevertheless, there are big differences among and within countries, and some of them might not even reach the targets. In 2013 WHO estimated that 285 200 individuals developed TB and 17 000 died from the disease in the Americas, 31 800 were co-infected with HIV, and 6 900 had multidrug resistant TB (MDR-TB). In that year, 77% of the TB cases were notified, leaving a gap of 65 000 patients not being detected. Most (68%) of the notified patients knew their HIV status, but only 50% of the MDR-TB cases were diagnosed. Results from the latest (2012) cohort analysis showed that 75% of new TB patients were successfully treated, falling short of the 85% target for 2015 (3).

Despite progress on TB control in the Region, challenges remain. These include: 1) insufficient diagnostic capacity that limits case detection; 2) high prevalence of HIV in TB patients (second in the world after Africa); 3) presence of MDR-TB and extensively drug resistant TB (XDR-TB) cases; 4) health systems related issues in some countries like weak governance, limited funding, poor information systems and lack of supervision; 5) increased rate of urbanization and migration with augmented inequalities and impoverished segments of the population (27% of urban population live in poor peripheral areas); 6) an epidemiological transition with growing presence of comorbidities like diabetes, alcoholism, smoking and drug addiction, all of which increase the risk for developing TB; 7) presence of vulnerable populations: ethnic minorities, prisoners, and migrants; 8) existence of catastrophic costs for TB patients; and 9) shortage of programs to address the underlying social determinants with an inter-programmatic and inter-sectorial approach.

In 2014 the World Health Assembly adopted WHO's "Global strategy and targets for tuberculosis prevention, care and control after 2015," later called the "End TB Strategy," that aims to end the global TB epidemic by 2035 (4). It advocates access to high-quality tuberculosis care and prevention for all and a patient-centered approach. It also addresses social determinants of tuberculosis and weaknesses in health systems. Furthermore, the strategy advocates research and innovation to improve methods and approaches. The Region is committed to implement it, and a Plan of Action for TB Prevention and Control embracing the new strategy was endorsed by the Pan American Health Organization (PAHO)'s Directive Council in late September 2015. Its implementation from 2016 on will imply cooperation at different levels and with various actors, both internationally and within countries.

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PAHO has already begun developing and implementing initiatives to better understand and address the TB control challenges in the Region and to facilitate the implementation of the new strategy. Among them are the initiatives for TB control in large cities, TB elimination, management of co-morbidities, and addressing TB in vulnerable groups with emphasis on ethnic minorities. Within the initiative of TB control in large cities, a framework that addresses social determinants and encourages greater involvement of other sectors and programs as well as the community and civil society has been developed.

The Structured Operational Research and Training Initiative (SORT IT) is a global partnership led by the Special Program for Research and Training in Tropical Diseases (TDR) at the WHO (5). TDR works closely with Ministries of Health, WHO Regional and Country Offices, donors and technical agencies such as the International Union Against Tuberculosis and Lung Diseases and Medecins Sans Frontieres. Through this partnership, SORT IT supports countries to conduct operational research around their own priorities, build adequate and sustainable capacity for operational research in public health programmes and promote evidence-informed public health action.

Better understanding the ongoing and changing dynamics of the TB epidemic requires operational research to design, refine, implement and scale up not only the response to this disease but also the tools to better address all of the factors involved in its prevention and control. The operational research presented in this issue of the *Pan American Journal of Public Health* contributes towards this goal. The research, conducted in various countries in the Region and supported by SORT IT addresses specific challenges related to TB diagnostics (Peru and Mexico), TB in vulnerable populations (indigenous people in Mexico or prisoners in El Salvador), TB and cities (Honduras), TB/HIV (Brazil), MDR-TB (Dominican Republic and Guatemala) and TB service delivery (Colombia and Brazil). We encourage such support to stimulate operational research and build capacity leading to improved public health in the Region.

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