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# Roadmap for tuberculosis elimination in Latin American and Caribbean countries: a strategic alliance

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**Joint ALAT/ERS/PAHO strategic alliance develops roadmap for TB elimination in Latin American and Caribbean countries** <http://ow.ly/RbHH3034gY6>

On July 4–5, 2016, representatives of the Asociación Latinoamericana de Tórax (ALAT), the European Respiratory Society (ERS) and of the Panamerican Health Organization (PAHO) met in Santiago de Chile to attend the VIII Regional Meeting of American Low Tuberculosis Incidence Countries. This meeting took place in connection with the 2016 ALAT Congress. Among the meeting attendees there were managers of national tuberculosis (TB) programmes and pulmonologists belonging to the ALAT Tuberculosis Dept.

The Latin American countries with low TB incidence (defined as <10 cases per 100 000 population [1, 2]) and some of those approaching this threshold (Chile, Uruguay and Colombia were also invited as non-low TB incidence countries) had the possibility to report TB control and elimination policies in Latin America, and to discuss the results achieved with experts from PAHO, the World Health Organization (WHO) Global TB Programme and the ERS.

Participants agreed that a clear epidemiological and programmatic heterogeneity exists in Latin America, with lack of published local scientific data. Local adaptation of global recommendations is needed in order to reach TB elimination (defined as fewer than one TB case per million population) [1, 2], and local evidence is mandatory to identify priorities and how to deal with them.

Based on the Strategic Plan of the Pan American Health Organization 2014–2019 [3], the PAHO Action Plan for Prevention and Control of TB [4] and the WHO End TB Strategy [5], the three organisations (ALAT, ERS and PAHO) jointly designed a roadmap towards TB Elimination in Latin America (Hoja de Ruta para la Eliminación de la Tuberculosis en Latinoamérica y el Caribe 2016–2025) to guide national TB programmes. A summary of the initiatives of this strategic alliance is presented here.

The WHO American Region (which includes Latin America, Canada, the USA and the Caribbean countries) has been the first to reach the Millennium Development Goals by 2015 (e.g. to halt and begin to reverse TB incidence, and halve prevalence and mortality in comparison with the 1990 levels) [6].

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In spite of the successes achieved, TB still represents a first-class health priority in the region, with relevant subregional heterogeneity as well as national and even subnational differences. WHO estimated 280 000 TB cases occurring in the region in 2014 (corresponding to an incidence rate of 28 cases per 100 000 population), of which only 228 476 were notified [7]. More than half of the incident cases were concentrated in four countries: Brazil, Peru, Mexico and Haiti. The mortality rate was 1.7 per 100 000 inhabitants with 17 000 deaths estimated (excluding TB/HIV deaths). 13% of the TB cases were co-infected with HIV.

WHO estimated that 6736 cases of multidrug-resistant (MDR)-TB occurred in Latin American countries and the Caribbean in 2014, with a prevalence rate of 2.4% among new and 13% among retreatment cases. Unfortunately, only 3636 (54%) cases were notified.

Out of the 3636 rifampicin-resistant or MDR-TB notified cases, 3461 have started to be treated as per WHO guidelines. In the 2012 cohort, the treatment success of these cases was 57% (figure 1).

An analysis of the current epidemiological trends in Latin America and the Caribbean countries suggests: 1) the estimated incidence decline is decelerating over time (figure 2); 2) even though the WHO detection target has been reached, an important gap between notified and estimated cases still exists; 3) TB/HIV co-infection continues to be a threat to TB control and elimination; and 4) MDR-TB remains a growing menace in the region.

Recently, WHO launched the End TB Strategy, which considers targets for TB prevention, care and control after 2015 [5], and provides an action framework for its implementation in low-incidence countries [2]. Only a few countries in Latin America and the Caribbean (Bahamas, Chile, Costa Rica, Cuba, Dominican Republic, Jamaica, Puerto Rico, Trinidad and Tobago, and the majority of the English-speaking countries and territories in the Caribbean) are at low TB incidence or are approaching this threshold [7]. However, in several other countries of the region, specific areas or settings exist that have low incidence of TB. Therefore, these countries are likely to face different challenges while implementing the WHO TB elimination strategy,

Besides its Strategic Plan 2014–2019 [3], PAHO also published the Action Plan to Prevent and Control TB 2016–2019 [4], a document aiming to decrease TB morbidity and mortality without specifically targeting TB elimination. While the Framework for TB Elimination in Low TB Incidence Countries [2] can be followed *tout court* in high-income countries such as the USA and Canada, a clear need exists for a local adaptation to the specific needs of Latin American and Caribbean countries.

Anticipating upcoming problems, ALAT, ERS and PAHO jointly developed a strategic vision to facilitate the technical approach by national TB control programmes of countries at low incidence of TB (at national or subnational levels) to support implementation of strategic plans towards TB pre-elimination (<10 TB cases per million population) and elimination (fewer than one TB case per million population).

Preliminary meetings were held in 2015 in Bogota, Colombia, to start developing the document, followed by the aforementioned Chile meeting preparing for the launch of the Hoja de Ruta para la Eliminación de la Tuberculosis en Latinoamérica y el Caribe 2016–2025 (figure 3). This document analysed the content and results of previous PAHO plans. The experts agreed that the current TB trend in Latin America is unlikely to allow reaching the End TB Strategy goals. The previous PAHO Regional Plan to Control Tuberculosis 2006–2015 [8] having been successful in several areas, may be used as a platform to build on further activities. Most of the countries incorporated, with the technical assistance provided by PAHO/WHO, the principles of the Stop TB Strategy into their TB programmes.

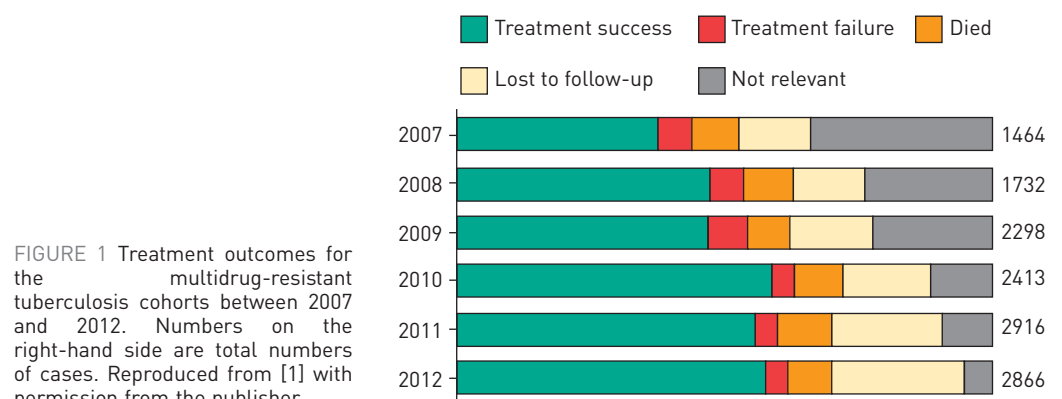


FIGURE 1 Treatment outcomes for the multidrug-resistant tuberculosis cohorts between 2007 and 2012. Numbers on the right-hand side are total numbers of cases. Reproduced from [1] with permission from the publisher.

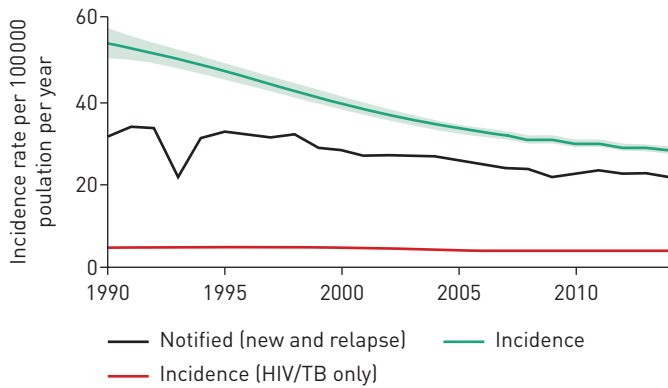


FIGURE 2 The decline in tuberculosis (TB) incidence and mortality in the American Region, 1990–2014. Reproduced from [1] with permission from the publisher.

Fortunately, in Latin America, the goals related to incidence, prevalence and mortality rates were reached earlier than expected. Other strengths of the region include increased detection rates, implementation of laboratory quality assurance and systematic management of MDR-TB cases, promotion of community involvement, and coordination of technical and financial partners.

In order to maintain and foster these achievements, political commitment is necessary to ensure adequate funding, a supporting legal framework, tailored actions to promote patient-centred care, attention to comorbidities and risk factors (diabetes, HIV, use of illegal drugs, smoking, *etc.*), and a plan to introduce new tools [9].

TB in vulnerable groups, a problem the as well documented in high-income countries [10], is also present in Latin American and the Caribbean. These include migrants from rural areas to big cities, South–South country migrants, people living in slums in big cities, indigenous populations, prisoners, the homeless and other groups [10].

The Hoja de Ruta para la Eliminación de la Tuberculosis en Latinoamérica y el Caribe 2016–2025 identified eight components and specific actions to pursue TB elimination in the region, which are presented in order of priority according to the experts’ opinion. 1) Identifying the core vulnerable populations and implementing the specific actions to deal with them. 2) Addressing the complex needs of the migrants and trans-border issues. 3) Strengthening operational research through training, coordination and targeted funding to identify local challenges and propose solutions to solve them. Each country needs to define its research priorities and identify potential sources for external support. 4) Fostering political commitment for TB care and prevention. Each country’s Government must support the End TB Strategy to fund the TB programme and the activities included in its Pillar 2. 5) Adapting the strategy at national and subnational levels while promoting global collaboration. 6) Enhancing active detection and treatment of latent TB infection together with active TB, according to the principles of TB elimination [11]. 7) Ensuring early and quality treatment of drug-resistant TB and MDR-TB cases while ensuring universal drug-susceptibility testing with conventional and/or new molecular methods, and availability of the necessary second-line drugs. 8) Improving continuous surveillance, and monitoring and evaluation activities to assess the progress towards the planned targets and TB elimination. Monitoring and evaluation indicators for each of those components were also proposed. These are summarised in tables 1 and 2.



FIGURE 3 Members of the Asociación Latinoamericana de Tórax/European Respiratory Society/Panamerican Health Organization alliance to eliminate tuberculosis in the Americas.

TABLE 1 Main indicators recommended for Latin American and Caribbean countries

| Impact indicators  | Milestones |      | Targets  |             |
|--|------------|------|----------|-------------|
|  | 2020       | 2025 | SDG 2030 | End TB 2035 |
| <b>1) Reduction in number of TB deaths compared with 2015</b>      | 35%        | 75%  | 90%      | 95%         |
| <b>2) Reduction in TB incidence rate compared with 2015</b>        | 20%        | 50%  | 80%      | 90%         |
| <b>3) TB-affected families facing catastrophic costs due to TB</b> | 0%         | 0%   | 0%       | 0%          |

SDG: Sustainable Development Goals; TB: tuberculosis.

Furthermore, a TB Research network was created to tackle the evidence gap, based on the positive results achieved by previous informal collaboration between the ERS and Latin American researchers [12–18]. The initiative belongs to the ALAT/ERS LATSINTB Project and the research network was called GILA-TB (Group of Investigators from Latin America in TB) (figure 4). This group will integrate and be closely linked with the Regional Network for Research in Tuberculosis, which is planned to be created in October, 2016, by all PAHO countries.

GILA-TB grouped investigators from most of the countries of the region, including those at high TB incidence. The ERS committed to support the coordination of the network, the projects' design, the data collection and analysis, and the finalisation of the writing phase until publication in relevant journals (with focus on Latin American publications). 33 investigators from 11 different countries (Argentina, Brazil, Chile, Cuba, Colombia, Guatemala, Mexico, Paraguay, Peru, Uruguay and Venezuela) attended together with members and coordinators of the ALAT Tuberculosis Dept.

After the introduction and presentation of the research projects already finalised [12–18], each participant presented their own background and experience in TB research activities. A brainstorming of potential projects to support followed, leading to approval of some of them based on feasibility, resources, existing data and burden of patients in the clinics represented at the meeting. Among others, the following projects were launched: a survey among the national TB programme managers to take a “picture” of the status of the control activities in the region; several retrospective studies (TB in children, pregnant women and healthcare workers, and outcomes of regimens including carbapenems, linezolid, bedaquiline and delamanid); and prospective studies focusing on TB in migrants and among prison populations. In addition, participants were invited to join existing projects, such as the ongoing Mexican project investigating post-TB treatment pulmonary sequelae and the need for pulmonary rehabilitation. The meeting was considered a success, fully covering one of the priority areas that is necessary to reach TB elimination.

Duties were assigned to each investigator and deadlines to submit proposals were defined. The project will have full support from ALAT and the ERS. As some researchers from the International Union Against Tuberculosis and Lung Disease and the national TB programmes have expressed their interest to participate, this initiative can, in a way, be considered a public–private effort to face TB and contribute to its elimination.

TABLE 2 Top 10 implementation indicators of the End TB Strategy

| Implementation indicators  | Recommended target level |
|--|--------------------------|
| <b>1) TB treatment coverage</b>  | ≥90%                     |
| <b>2) TB treatment success rate</b>  | ≥90%                     |
| <b>3) TB-affected households that experience catastrophic costs due to TB</b>    | 0%                       |
| <b>4) Newly notified TB patients diagnosed using WHO-recommended rapid tests</b> | ≥90%                     |
| <b>5) Latent TB infection treatment coverage</b>                                 | ≥90%                     |
| <b>6) Contact investigation coverage</b>   | ≥90%                     |
| <b>7) Drug susceptibility coverage for TB patients</b>                           | 100%                     |
| <b>8) Treatment coverage, new TB drugs</b>                                       | ≥90%                     |
| <b>9) Documentation of HIV status among TB patients</b>                          | ≥90%                     |
| <b>10) Case fatality ratio</b>   | ≤5%                      |

TB: tuberculosis; WHO: World Health Organization.



FIGURE 4 Participants to the first research project in Latin America.

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