Increasing tuberculosis case detection using Xpert® MTB/RIF in the most vulnerable populations in Central America

◆ **Guatemala** is among a group of seven lower-middle income countries in the Central American region. In 2013, the number of notified tuberculosis (TB) cases in Guatemala was 16,500, of which only 3369 cases were identified through the national health system. The HIV – TB co-infection was 8.95% and the prevalence of TB rifampicin-resistant and multi-drug resistant of all forms of tuberculosis was 0.8% in 2013.

In mid-2014, a co-operative effort among TB REACH Wave 3, the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) and the Ministry of Health (MOH) of Guatemala was undertaken to increase the detection of pulmonary TB cases through the use of Xpert® MTB/RIF (Xpert) in six cities. The diagnosis algorithm for this project was based on the MOH algorithm for TB detection.

In September of 2014, with financing through TB REACH, a total of seven machines, four of two modules and three of four modules, were procured. These machines were placed at San Vicente Hospital in the city of Guatemala, Malacatán National Hospital, Friendship National Hospital Japón-Guatemala in Puerto Barrios, Izabal, Rodolfo Robles Hospital in Quetzaltenango, Retalhuleu Anti-tuberculous Dispensary and Mazatenango Health Center in Suchitepéquez. The project began in February 2015, after training the laboratory personnel on the use of equipment, diagnostic algorithm training for health personnel, preparation of equipment sites and correct installation of the equipment in each city. Each GeneXpert machine is connected to a computer with Internet access, allowing for automatic storage of test results on the GxAlert ® platform, developed by Abt Associates and System One.

Sputum samples were collected from presumptive TB patients with symptoms suggestive of TB. Those with initial negative results for TB were tested again by sending their sputum sample to a reference laboratory for Xpert analysis.

As of June 2015, a total of 93 TB cases have been diagnosed out of 1,845 eligible samples examined through Xpert, corresponding to a 6% positive yield in the six laboratories. In addition, 463 cases have been detected through sputum microscopy among 6,383 samples for the same period, which corresponds to an 8.2% positive yield.

Considering that Guatemala is currently in the midst of a political crisis, obtaining these results is a remarkable achievement. Due to the crisis, the active case-finding activities have significantly decreased. The transportation of sputum samples from health services to reference laboratories has also been affected in some regions, resulting in only 31% of all eligible samples being referred for Xpert testing.

Looking to the challenges ahead, additional efforts should focus on strengthening the existing sample transportation network, expanding the network by creating new connections, and reinforcing the cold chain in the transportation process. Other lessons learned from the project include the understanding that health personnel at district level services must be well-informed on the project algorithm and that the work plans have to be measurable in real time.

Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET)

Guatemala

Stop TB Partnership

TB REACH

FINDING AND TREATING PEOPLE WITH TB IN THE WORLD'S POOREST COMMUNITIES

Government of Canada **Gouvernement du Canada**

Stop TB Partnership

More than nine and a half million people around the world become ill with tuberculosis (TB) each year. About one-third of them fail to get an accurate diagnosis or effective treatment and are more likely to die from this curable disease.

By supporting the many partners working in the field, TB REACH offers a lifeline to these people by finding and treating people in the poorest, most vulnerable communities in the world. In areas with limited or non-existent TB care, TB REACH supports innovative and effective techniques to identify people who have TB, avert deaths, stop TB from spreading, and halt the development of drug resistant strains.

TB REACH has supported a total of 142 projects in 46 countries. To date, 33 million people have been screened for TB in project areas, of which, 1.7 million have received TB treatment, accounting for 856,000 lives saved. Some projects have seen increases in TB notifications of more than 100%.

Our partners are providing evidence for new case finding approaches and are working with community and policy leaders as well as donors such as The Global Fund to integrate those approaches into national strategies that improve TB case detection.

TB REACH was launched in 2010 thanks to a CAD$ 120 million grant from Global Affairs Canada.

TB REACH acts as a pathfinder, providing fast track funding for innovative projects, monitoring effectiveness and leveraging funding for scale up.