

Controlling TB along the Mexico-U.S. Border

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INTRODUCTION

The more than 2 000-kilometer-long border between the United States and Mexico joins us historically, geographically, and commercially in a very particular way. It is a place where different nationalities gather (not just Mexicans and U.S. Americans) and cultures and languages (and not only English and Spanish) converge. It is a great binational community with an estimated population of 25 million.¹ According to the U.S. Department of Transportation, in 2012, more than 234 million vehicles and individuals crossed Mexico's border into the United States through 25 land ports of entry. This represents approximately 70 percent of all U.S. international entries.²

In this context of enormous mobility, tuberculosis (TB) and its co-morbidity conditions represent an important burden for the respective state economies.³ The fluidity of travelers in the area boosts the propagation of TB on both sides of the border. For example, between 2011 and 2013 alone,

about 22 million vehicles crossed the border northward from Mexico to Texas, and 18 million in reverse.⁴ In addition, according to a 2012 estimate, six million undocumented Mexicans live in the United States.⁵ According to the U.S. Department of State, in 2011, 143 446 Mexicans who requested a visa for permanent residency were admitted,⁶ all of whom were given TB exams as per Centers for Disease Control and Prevention (CDC) technical instructions.⁷ Approximately 5 percent of those tested were diagnosed with tuberculosis, requiring follow-up.

BINATIONAL REQUIREMENTS FOR TB CONTROL

Tuberculosis is the world's main cause of death and morbidity from a single infection, and, although treatable, is re-emerging as a serious public health problem worldwide, with special emphasis on our northern border.⁸ In most cases, the bacteria can lie dormant for years and can be activated by malnutrition, the development of type-2 diabetes,

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A doctor points to a lung infected with TB.

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In 2001, the rate of tuberculosis cases was five times greater in persons born in Mexico than in those born in the U.S. in those four states. Since 1993, Mexico has contributed the majority of new cases of tuberculosis in the United States.¹⁷ This does not necessarily reflect an unusually high rate of TB in Mexico, but rather a large and consistent flow of migrants from Mexico to the United States.¹⁸

HIV, and other chronic illnesses that compromise the immune system.⁹ Mexican immigrants in the United States and border residents of Mexican ancestry suffer disproportionately from many of these conditions.¹⁰ Today an estimated one-third of the world's population is infected with the TB bacillus without any clinical symptoms (latent or asymptomatic tuberculosis infection). The same is true of residents of Mexican origin in the United States.¹¹ Approximately 5 percent of those infected will develop the active disease within five years, while another 5 percent will develop it later.¹²

The stress caused by the migratory process imposes an additional risk for developing active TB, which means that 19 percent of all TB cases among foreigners occur among recent arrivals to the United States.¹³ But, lapses between TB treatments can be greater among binational patients due to the frequency of trans-border trips. For this reason, the appearance of drug-resistant strains of TB is more common among people born in Mexico.¹⁴

According to the World Health Organization (WHO), 8.7 million people developed non-recurring active tuberculosis in 2011; 13 percent were also infected with HIV; and 1.4 million died due to the disease.¹⁵ For example, according to the CDC, the United States reported 10 528 cases of tuberculosis in 2011.¹⁶ It is no surprise that among them, the TB rate in persons born abroad was 11.5 times greater than in persons born in the United States. Of all the patients born abroad, approximately 25 percent were born in Mexico. More than 75 percent of the cases were in border states: Arizona, California, New Mexico, and Texas.

STRENGTHENING BINATIONAL ALLIANCES

Tuberculosis recognizes no borders, and it is imperative that both countries cooperate to prevent and control it in binational border communities. Joint work with binational, local, state, and federal health departments and academic and private-sector institutions has been an important aspect of the binational effort to control tuberculosis on both sides of the border for more than 30 years. Working together, Mexican and U.S. ministries of health and other local and state public health agencies have led important efforts to establish significant collaboration in disease surveillance and control initiatives.¹⁹ The main guidelines for mutual collaboration have been respect for national sovereignty, abidance by the national laws of each country, the recognition of the differences between the two public health systems, the establishment of clear lines of communication and coordinated joint actions, and respect for patients' rights.

BINATIONAL INITIATIVES TO STRENGTHEN THE FIGHT AGAINST TB

Awareness of the concept and relationship between diseases on both sides of the border led to the development and implementation of an important series of initiatives for binational disease surveillance and control.²⁰ Among the first was the creation of an improved surveillance system of infectious diseases in 1997 (BIDS) and many other binational

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control initiatives. These efforts were approved by the U.S. Council of State and Territorial Epidemiologists, the Pan American Health Organization, and later, the U.S.-México Border Health Commission.

One example of a very successful binational strategy against TB is the implementation of TB *Juntos*. In 1991, the government and community-based organizations in El Paso, Texas, and Ciudad Juárez, as well as the CDC, created *Juntos* to guarantee medical treatment for TB patients in the Ciudad Juárez health jurisdictions, to improve access to culture and drug-susceptibility services, improve the clinical management of patients in grave condition, facilitate the crossing of referred patients, and create a health team to help put the project's activities into practice.

The fact that the *Juntos* project has lasted 23 years is testimony to its general efficacy due to its make-up and complete acceptance by the Ciudad Juárez official TB-control program. It developed as a complementary service to make up for the binational needs that the official TB-control programs on both sides of the border were unable to completely fulfill. The project is based on the experience of case management, laboratory support, and directly observed treatments, short-course (DOTS). From 1991 to 2012, *Juntos* has achieved the following:

1. Treating 1 762 binational TB patients using DOTS, with an 82.3 percent treatment completion rate, which reached 91 percent in the last five years, compared to the world average of 72 percent;
2. Treating 99 cases of multidrug-resistant tuberculosis with an 83 percent cure rate (the world average is 50 percent);
3. Examining 8 856 TB contacts;
4. Making 108 167 home visits to patients;
5. Gathering 56 913 sputum samples for Ziehl-Neelsen stain tests; and
6. Gathering and processing 8 444 samples for cultures and sensitivity tests.²¹

A second exemplary binational project is one that has traced and binationally registered TB, conceived in 1994 by the El Paso, Texas City and County Health Department, and the Network of Migrant Clinics in Austin.²² The project was designed to prevent lapses in TB mobile binational patients' treatment. In these cases, treatment is complicated by the fact that many of them cannot remain in a specific place for long enough to complete the long TB treatment.

These patients are registered when they are interviewed in person or by phone by health center personnel. Once the patient is registered, a case officer stays in regular contact with him/her and with the attending physician to document the completion of treatment. At the beginning and end of the treatment, the case officer notifies the original clinic where the patient was registered and reports to the official TB control units in both countries about the status of the case.

ACHIEVEMENTS AND CHALLENGES

The success of model projects like *Juntos* and the binational patient registry led to the creation of several other binational TB projects in border areas beyond Juárez-El Paso, such as the Binational Health Card, CureTB in San Diego, and TB-NET in Austin. These have supported trans-border TB control efforts by strengthening communication and coordination among health departments on both sides and by attracting greater binational resources to fight the disease. Other achievements include the adoption of a common definition of binational tuberculosis in the United States and improved binational control strategies for TB cases in mobile trans-border populations.

The cost for Mexico and the United States of implementing these projects has been modest, but the rewards have been substantial. General estimates indicate that the projects have contributed to achieving a lower number of TB cases in the United States (436), have prevented 49 deaths, and saved US\$15 million in costs.²³ In addition, preventing treatment lapses in mobile border patients has prevented the development of drug resistance.

Since 2010, the United States-México Border Health Commission (USMBHC) has convened an annual TB Border Consortium meeting between the United States and Mexico.²⁴ The most recent was organized by the New Mexico's and Chihuahua's Border Health Regional Offices on May 7 and 8, 2013, in Las Cruces, New Mexico. Federal and state

experts were called upon, as were the directors of local Mexican and U.S. TB programs to explain the status of the problem and develop action plans. The TB Consortium members identified the following operational challenges for effective control:

1. Continuing use of inappropriate procedures for guaranteeing secure trans-border movement of TB samples and medications;
2. The repatriation of federal detainees without providing continuity for TB-care plans;
3. The inability to apply appropriate tools for legal TB control;
4. The lack of case reporting on a binational level;
5. The lack of a functional definition of a binational TB case;
6. The continuity of antimycobacterial medication for binational TB patients without medical supervision;
7. The growing volume of international travelers;
8. Accountability and quality control for existing TB initiatives; and
9. Decreasing funding in the United States.

CONCLUSIONS AND RECOMMENDATIONS

The participants in this international seminar on strategic health issues on the U.S.-Mexico border recognized previous

A very successful binational strategy has been TB Juntos, a project based on experiences of case management, laboratory support, and directly observed treatments.

binational TB control efforts and validated the basic guiding principles for collaboration between the two countries. They agreed on the need to deal with the common problem areas classified by the USMBHC TB Border Consortium, including:

1. Improving continuity in patient care and treatment completion rates in binational patients;
2. Continued increase in coordination of patient management among state health care providers in the United States and Mexico as well as making better use of federal binational legal instruments; and
3. Establishing more uniform procedures for handling over and receiving TB patients repatriated from the United States to Mexico.

In addition, the participants pointed to a specific need: formally evaluating the binational tuberculosis projects. Therefore, they recommended forming a special leadership group to decide on the next steps for that evaluation. **NM**

NOTES

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