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MEASURE Evaluation | BRIEF

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Two Nations Tackle Tuberculosis

USAID Legacy in Mexico



SOLUCION TB of PCI

The National TB Program promotes person-centered care.

Tuberculosis (TB) is the second leading cause of death from an infectious disease worldwide after HIV/AIDS. It typically affects the lungs and is spread in the air when people are sick with pulmonary TB. The World Health Organization declared TB a global public health emergency in 1993. TB affects more men than women and is mostly found in adults.

United States-Mexico Collaboration

Over the last decade, political commitment from Mexico and the United States (U.S.) regarding tuberculosis has been strong. U.S.-Mexico collaboration began in 1999, when Mexico's estimated tuberculosis incidence was over four times higher than the incidence of the United States. In February 1999, Mexican President Ernesto Zedillo and U.S. President William Clinton entered into a Memorandum of Understanding (MOU) on the Cooperation in Prevention and Control of Tuberculosis, emphasizing both nations' joint concerns and affirming international cooperation for TB control. The MOU led to a formal agreement between the U.S. Agency for International Development (USAID) and Mexico's Secretariat of Health. USAID agreed to provide Mexico's National TB Program (NTP) with assistance intended to improve the diagnosis, control and monitoring of TB.

With guidance from the government of Mexico, USAID prioritized 13 states based on their proximity to the U.S. and the state's TB rates, while also supporting the NTP office. The U.S. assistance focused on the expansion of DOTS (Directly Observed Treatment, Short-Course) put into place by the NTP three years earlier. USAID also supported significant laboratory improvements. Between 2000 and 2012, USAID

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assistance represented an additional 10% of the government of Mexico's (GOM) TB budget. In 2011, Mexico's NTP achieved the Millennium Development Goals of 70% case detection and 85% treatment success rate at the national level.

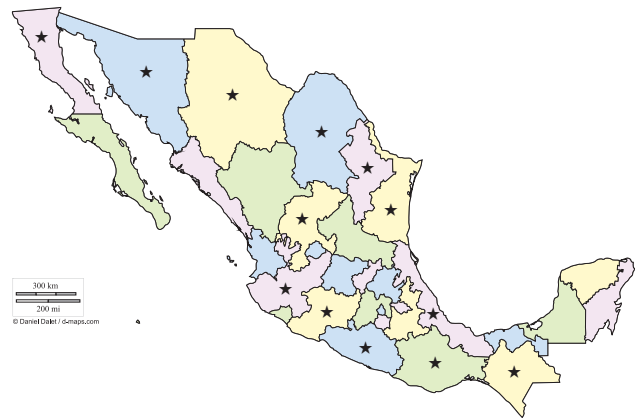
Laboratory & Surveillance

The TB Laboratory Network within the Institute of Epidemiological Diagnosis and Reference (InDRE) assists the NTP with diagnosis and treatment of TB. USAID's support aimed to improve diagnostic capacity in 300 laboratories of the network.

Throughout the years of support, USAID procured 500 microscopy sets, 300 computers, and funded 25 supervision teams across 32 states in Mexico.

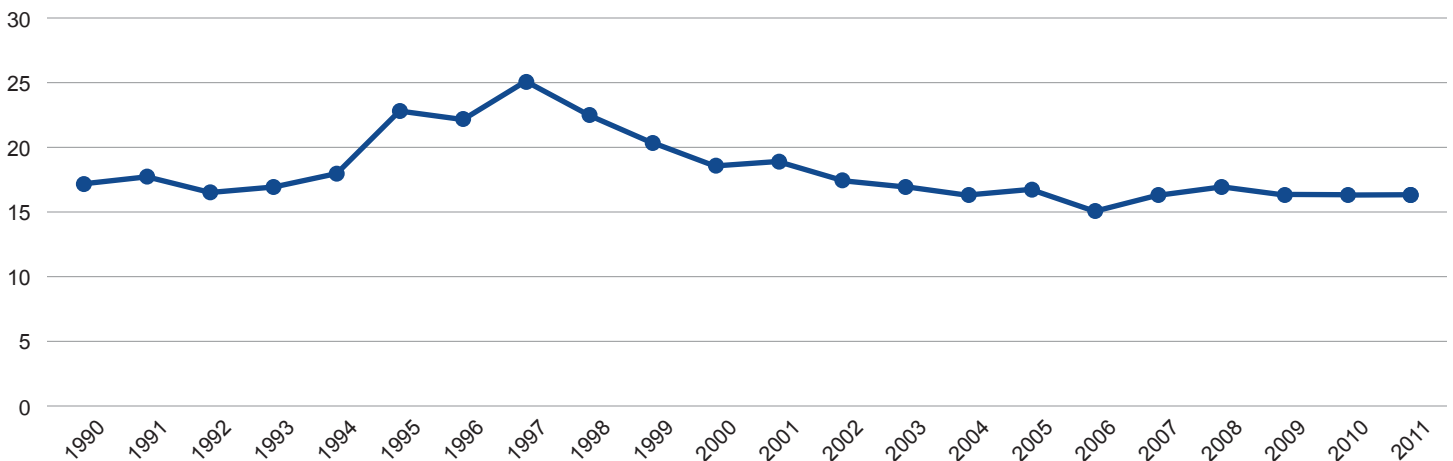
Today, the laboratory network includes 31 state public health laboratories plus the national reference laboratory in Mexico City. The laboratory network has 0.6 microscopy units per 100,000 inhabitants and one culture laboratory per 5 million, providing the laboratory network ample capacity to increase the number of microscopy examinations for diagnosis. The laboratory network is also equipped to detect Multi-Drug Resistant Tuberculosis (MDR-TB) with first- and second-line drug susceptibility testing.

Figure 1: USAID Priority States in Mexico



After declining at least four percentage points each year (1997–2006), Mexico's TB incidence plateaued between 2007 and 2011, with the number of newly identified TB cases increasing by 8.6% nationally and 18.3% in targeted priority states. The increase in the number of reported cases reflect improvements in Mexico's case detection and reporting systems. Mexico's TB case detection rate improved steadily from 28% in 1990 to 96% in 2009. By 2011, the WHO reported that 100% of Mexico's estimated cases of TB had been detected. USAID's technical assistance and investments in improved laboratory capacity contributed to the strengthening of Mexico's TB detection system and to improving TB case finding.

Figure 2: TB Incidence Per 100,000 Inhabitants, 1990–2011



A 2009 survey conducted with USAID support in 9 states found low levels of drug resistance in the populations studied (2.3% and 7.2% among untreated and previously treated TB patients respectively). With the assistance of USAID, the GOM determined the number of cases and prevalence of Multi-Drug Resistant TB are low and do not represent a major problem for Mexico's national TB control.

International Standards for TB Control

The International Standards for Tuberculosis Care (ISTC) are designed to ensure the delivery of high-quality diagnosis and care for patients of all ages with pulmonary and extrapulmonary TB, drug-resistant TB, and TB/HIV co-infection. ISTC also outlines important public health responsibilities of healthcare providers, including testing those that may have been exposed to TB and reporting all TB cases per the national protocol. With support from USAID, the Secretariat of Health adapted the ISTC for the Mexican health system in 2006. Four hundred healthcare workers were trained and the TB standards were published and distributed. Within the first year, identification of suspected TB cases increased 80% and diagnosed pulmonary cases increased 300%.

World Health Organization DOTS Expansion Strategy

1. Political commitment with increased and sustained financing
2. Case detection through quality-assured bacteriology
3. Standardized treatment with supervision and patient support
4. An effective drug supply and management system
5. Monitoring and evaluation system and impact measurement



Oaxaca's Ministry of Health and SOLUCION TB of PCI

Women participating in an MOH 'TB intensive case-finding fair' in Oaxaca. MOH workers carry out community awareness raising activities and TB screening and testing in rural areas.

DOTS Expansion through Community Engagement and Person-Centered Care

Treatment for new cases of TB consists of a six month regimen of four first-line drugs. To support the administration of this treatment, WHO developed the Directly Observed Treatment, Short-Course (DOTS) strategy in the mid-1990's resulting in significant progress in disease control worldwide by 2005.

Building on the success of the DOTS program, the NTP and USAID SOLUCION TB Project utilized advocacy, communications, and social mobilization (ACSM) tools to increase the capacity of both the health sector and the community to recognize and address TB. In 2006, teams in the 13 priority states rolled out ACSM tools such as Integrated System for Transformational Assessment and Results (I-STAR), person-centered care, case management, and Photovoice to promote active community participation in DOTS and to align all partners who provide TB diagnosis and treatment services. A Knowledge, Attitudes and Practices (KAP) survey was conducted in 2009.

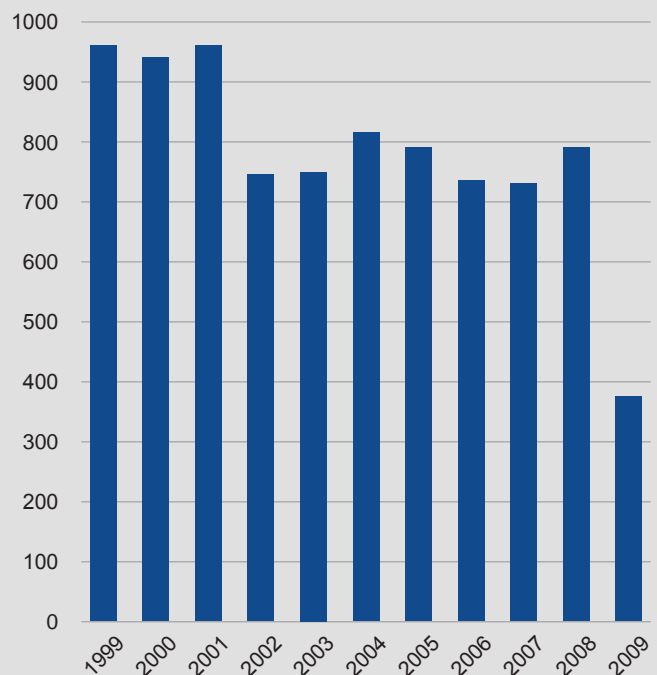
I-STAR: I-STAR (Integrated System for Transformational Assessment and Results) is a participatory assessment and planning tool used to build capacity among healthcare teams to address tuberculosis. It was adapted by the NTP and SOLUCION TB project for Mexico. I-STAR was used to engage stakeholders at the state and jurisdiction levels in a rapid assessment of TB operations systems with the aim to identify areas for improvement within their TB programs. Using I-STAR afforded healthcare teams a significant period of time (usually 6 months) for individual and group self-reflection, learning, planning and action. Steps included stakeholder interviews, reviews of TB reports and patient charts, and visits with community members to better understand community needs.

Person-Centered Care and Case Management: Local TB programs were trained to provide person-centered care. The trainings were designed and implemented with the help of people affected by TB. The goal of person-centered care is to ensure that people affected by TB are equal partners with healthcare providers in assessing their health, identifying care alternatives, and choosing the most appropriate services. Special attention is given to the individual’s circumstances, creating co-responsibility for the resolution of their case. Healthcare providers, DOTS workers, the person affected by TB, and family members are all encouraged to be involved in decision making. An assessment of the person affected by TB should take into account all the person’s needs including social, psychological, economical and clinical. The treatment should fit the patient and not the other way around.

Success of ACSM in Oaxaca

Although there were many successes across the country, the integration of ACSM and DOTS is best illustrated by the TB program in Oaxaca. Strong leadership, political commitment, DOTS expansion, and an ACSM program increased the visibility of TB, created a better understanding of the disease, and increased commitment across all sectors to get involved and fight TB. Due to these successful interventions, between 2006 and 2008 the TB cure rate in Oaxaca increased from 40% to 83%, while the number of cases decreased between 1999 and 2009.

Figure 3: Number of TB Cases in Oaxaca



“Now I know much more about TB, its causes, its symptoms: coughing, night sweats, weight loss, the need to take the medication as prescribed and without interruption, that the person affected does not need to be isolated, that TB is curable, and most importantly that TB does not mean death.”

—Juan Hernandez, 40-year-old patient affected by TB and diabetes



SOLUCION TB of PCI

Nuestra Casa is a traveling interactive exhibit that represents a typical home of a person affected by TB in Mexico's northern border, highlighting every day stories of success, challenges, and community life in northern Mexico.

Photovoice: Photovoice is an ACSM tool used to engage both providers and the community in tuberculosis awareness projects. Photovoice was used to increase people's knowledge about the risks of contracting TB and the signs and symptoms of TB infection. It was also a powerful tool used to address



Click [here](#) to view an interview with Damien Shumann.

fears associated with the disease. **Nuestra Casa**, a Photovoice project, is a touring exhibit which reflects the life stories of people affected by TB from Mexico's northern border. The project

presents stories of the emotional struggle involved in accepting a TB diagnosis, stories of hope while living with TB, and stories of entire communities taking action to combat TB in Mexico. Damian Schumann, a South African artist, was invited to develop **Nuestra Casa** based on the 'TB shack' he exhibited at the 2008 International AIDS Conference in Mexico.

Another Photovoice success story is the photo documentary *Luchando por la Vida* by Karla Ferra. Karla documents four people affected by TB, their fight for a cure, and their relentless aspirations for a healthy life. Click [here](#) to view Karla Ferra's photographs.

Knowledge Attitudes & Practices: Information about the spread of TB and the public's misconceptions and fears about the disease is an important tool for TB control and treatment. SOLUCION TB interviewed the general public, health care providers, TB patients, and their family members in five target communities as part of the knowledge, attitudes and practices survey in 2009. The household survey revealed that the general population could name the basic symptoms of TB. They also understood that anyone could contract TB when an infected person coughed close to them.

Unfortunately, 70% of people thought that TB could also be transmitted by sharing a plate of food and 50% of people agreed with the statement "If a person has TB, some community members will behave differently towards that person for the rest of his or her life." Fear and isolation were also highlighted by the interviews with TB patients; 86% of patients prefer to keep their distances from others to avoid transmitting the disease and 75% of patients feel hurt by the way people react when they find out about their disease.

"We must put a STOP to stigma, discrimination, negligence and indifference. We have access to scientific methods; we have the medicine and everything else we need to STOP TB. What is preventing us from doing so?"

—Brenda, El Paso TX, TB Photovoice Participant

TB, HIV/AIDS, & Diabetes

HIV and diabetes contribute to increased incidence of TB infection. Both diseases reduce a person’s immunity and aid the progression of a latent TB infection to active disease. From 2007 to 2011, new TB infections associated with HIV/AIDS and diabetes may have contributed to the stabilization of TB incidence and mortality rates in Mexico, which may have otherwise declined. In 2011, 21% of the new TB cases were reported to be co-infected with diabetes and 7% with HIV/AIDS.

Although co-infection was a priority for the Secretariat of Health at the time, no system was in place at the local level to address TB co-infections. The USAID program elevated the priority of care for co-infections, strengthened referrals and improved information systems between the programs, screening 14,000 persons affected by TB, HIV/AIDS, or diabetes for indications of one of the other diseases that year. The number of TB-HIV co-infections identified more than doubled (650 in 2001 vs. 1,400 in 2007) and 329 individuals in care for one disease were diagnosed with indications of a second disease.

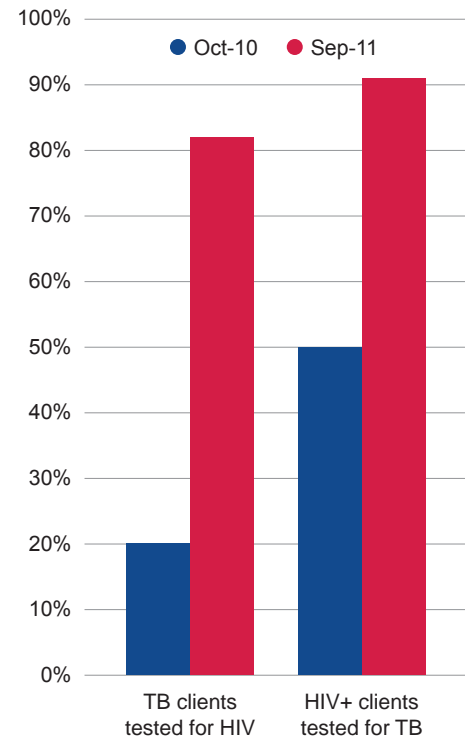
MDR-TB in Puentes de Esperanza (2006–2011)

The aim of the Puentes de Esperanza project was to create the infrastructure in the Baja California public health sector to support diagnosis, monitoring, and successful adherence to treatment for patients with multidrug-resistant tuberculosis (MDR-TB.) Consortium members included USAID, Rotary International, the Lash Foundation, the American College of Chest Physicians, the San Diego County Health and Human Services Agency, and the Secretariat of Health in Baja California.

High treatment success (90%) in Puentes Esperanza was achieved by ensuring second-line drug susceptibility testing, uninterrupted access to the correct TB drugs, 5 days per week directly observed therapy, patient/family education, and ongoing education for health care providers. Training, education, and sustainable communication between providers on both sides of the border were necessary in order to reach the project aim.

This highly successful project influenced the establishment of new policies in state and national programs. The National TB Program has adapted the Puentes de Esperanza monthly monitoring tool for MDR-TB patients. Early detection of multidrug-resistant tuberculosis has increased in Baja California overall as the state implements lessons learned at Puentes de Esperanza. In the last five years, the Secretariat of Health in Baja California transitioned from losing most of their MDR-TB patients to death or loss to follow-up to boasting one of the best treatment success rates in the world.

Figure 4: Testing of TB and HIV Among HIV+ and TB clients



Lessons Learned

USAID financial and technical support was a key contribution to improve the coverage and quality of TB control activities, mainly in diagnosis, treatment success, and quality of patient-centered TB services. The main improvements were related to the laboratory infrastructure and the human resource capacity of the NTP at all levels. Many jurisdictions increased diagnosis of TB cases by improving the quality of care and introducing advocacy, communication, and social mobilization (ACSM) tools. These experiences were at pilot level only, and did not expand nationally. In order for the work supported by USAID to make maximum impact, it is important to disseminate the lessons learned by the program.

- The provision of laboratory infrastructure and human capacity building had a positive effect on political commitment, funding, and staffing of the TB program.
- Projects based mainly on external financing (staff incentives, mass media campaigns) were not sustainable.
- Direct support to improve quality of TB services delivery through repeated short-term consultant missions with long-term planning by a single agency proved effective.
- When not accompanied by a national activity to detect infectious (smear-positive) TB suspects, particularly in outpatients of large hospitals, ACSM and capacity building had limited epidemiological impact.
- TB programs required careful oversight of key operational and epidemiological indicators for action, such as the number of persons examined with microscopy for diagnosis, the positivity rate of microscopy, the trend of case notifications, proportion of smear-positive among pulmonary TB patients, the prevalence of comorbidity with HIV/AIDS and diabetes, and TB mortality.

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