



SOLUCION TB

Strengthening Observed therapy *Linking Up* Community-based *Integrated Outreach Networks* for *TB* control

Tijuana and Mexicali, Baja California, Mexico

Final Report
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I try to answer a question –how *hard* is the heart of someone who has not lived with TB? Do they really need to live through the fear of losing a loved one, to start getting information? We must open our heart and not discriminate without knowing the disease.

Picture taken by Alma, the mother of a 3 year old child with TB

A poster was produced with this image and the message and has been distributed in 13 states. The state of Jalisco, Mexico requested permission from Alma Rosas to replicate and distribute several hundred copies. Since her participation on the Voices and Images project in late 2007, Ms. Rosas has become a vocal activist for TB and has presented her story and her daughter’s struggle to health workers at local and regional forums throughout Mexico.

PCI would like to thank USAID for their funding and support of the life-changing activities of the SOLUCION TB Project

ACRONYMS

ACSM	Advocacy, communication, and social mobilization
AIDS	Acquired immune deficiency syndrome
BC	Baja California
CSTS	Child Survival Technical Support
DIP	Detailed Implementation Plan
DOT	Directly observed therapy
DOTS	Directly observed therapy, short course
DST	Drug susceptibility testing
HIV	Human immunodeficiency virus
ISESALUD	Instituto de Servicios de Salud Pública del Estado de Baja California
KAP	Knowledge, attitudes, and practices
M&E	Monitoring and evaluation
MDR	Multi-drug resistant
MIS	Management information system
MOH	Ministry of Health
MSC	Medicina Social Comunitaria
NGO	Nongovernmental organization
NTP	National Tuberculosis Control Program
NPTB	New Pulmonary TB
PCI	Project Concern International
PMP	Performance monitoring plan
PTB	Person with TB or Person affected by TB
PVO	Private voluntary organization
SAT	Self administered therapy
SINAVE	National Epidemiological Surveillance System.
SOLUCION TB	Strengthening Observed therapy Linking Up Community-based Integrated Outreach Networks for TB
STBE	SOLUCION TB Expansion project
TB	Tuberculosis
USAID	United States Agency for International Development
USMBHA	US Mexico Border Health Association

I. Executive Summary

The following is the final report for the SOLUCION TB (Strengthening Observed therapy Linking Up Community-based Integrated Outreach Networks for TB control) project, implemented from October 1, 2004-September 30, 2008 by Project Concern International (PCI) in partnership with ISESALUD (*Instituto de Servicios de Salud en el Estado de Baja California*), the public sector health service of the municipalities of Tijuana and Mexicali, Baja California (BC), Mexico. The overall goal of the SOLUCION TB project was to decrease tuberculosis (TB) morbidity and mortality by expanding implementation of community-based efforts and achieving treatment success rates of 85 % in these two municipalities of northwest Mexico, which together contribute over 80 % of total TB cases in BC. The project's Strategic Objective (SO) was to *increase TB treatment success rates and influence national TB efforts by developing and implementing the SOLUCION TB strategy of using promotoras/es (health workers) and Directly Observed Therapy (DOT) health workers.*

According to baseline assessment data collected in 2004, the treatment success rate of new pulmonary TB (NPTB) cases was 58.4%¹. Preliminary 2007² results, collected by ISESALUD, indicate that the average treatment success rate for NPTB cases in the municipalities of Tijuana and Mexicali during the 3 years of project implementation is 74.72³ % (66.57% in Tijuana and 82.86% in Mexicali). These figures indicate an overall increase of 16.32 percentage points or a 27.94% increase in treatment success rate, after the implementation of the SOLUCION TB project. Furthermore, the treatment success rate for persons served by SOLUCION TB for the year 2007 alone shows a slightly higher result at 78.17%⁴, or a difference of 18.77 percentage points for an increase of almost 34% above the baseline rate. (The rates for treatment success for Tijuana and Mexicali are listed in the updated performance monitoring plan in section IV).

Data from the National TB Program (NTP) indicate that in 2008, there were approximately 1,176 cases of TB in Baja California. A total of 234⁵ people died from the disease in 2006. The caseload distribution of pulmonary TB reported by the NTP for BC during the project implementation years is as follows:

Table 1: NPTB caseload distribution by jurisdiction and by year (Source: Plataforma Unica de Informacion Modulo Tuberculosis/DGE)

	2005	2006	2007	2008
Mexicali	352	390	367	316
Tijuana	756	614	651	681
State Total	1,308	1,172	1,162	1,176

¹ Found in the nation-wide epidemiological database utilized in Mexico until 2005, known as EPI-TB.

² The last year with full data available as cohort information for 2008 will not be available until July-September 2009.

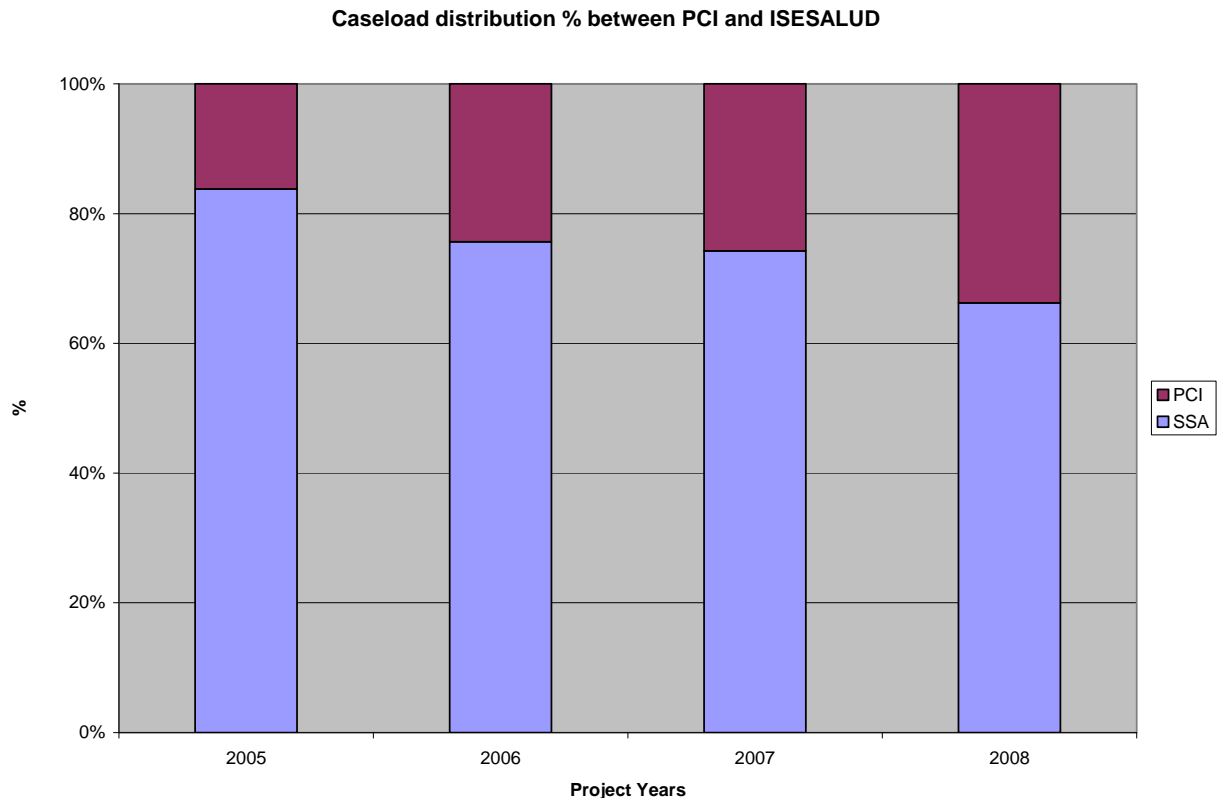
³ Plataforma Unica de Informacion modulo tuberculosis/Direccion General de Epidemiologia

⁴ Reports submitted by TB heads from ISESALUD Tijuana and Mexicali jurisdictions

⁵ Base de datos de Vigilancia Epidemiológica de la Mortalidad 2006. Secretaria de Salud/DGE

Of the 4,818 reported cases through 2008, a total of 1,193 were served by SOLUCION TB (out of an EOP goal of 1,190⁶).⁷ This represents slightly over 100% of the intended 4-year target, and about 25% of the overall total of TB cases for the 4 years.

Figure 1: Caseload Distribution (%) of persons with TB (NPTB) served by PCI out of total # of NPTB reported by ISESALUD (SSA).



As a result of the potential for and documented increase in treatment success rates over the life of the project, SOLUCION TB has been adapted and expanded into an additional twelve states in Mexico. These states are also starting to benefit from the implementation of a similar strategy based on the SOLUCION TB model and experience.

Since its inception, the project established a close partnership with the USAID Mission in Mexico City, in particular with Molly Lindner, Health Program Manager. Ms. Lindner has collaborated closely with PCI, participating in key meetings and activities, and has been an active participant in Phase 1, or the needs assessment phase, of the expansion project.

⁶ As defined in IR1.

⁷ Data for Mexicali has not been confirmed officially by the MOH.

II. Description of Progress by Intervention Area

The SOLUCION TB project's SO was: *To increase TB treatment success rates and influence national TB efforts by developing and implementing a SOLUCION TB strategy of using promotoras/es and DOTS health workers.*

Contributing to the SO were three Intermediate Results (IRs): IR 1--The “*SOLUCION TB* model” implemented in the departments of Mexicali and Tijuana in BC; IR2--The political commitment for the national and state TB control program improved and sustained; and IR3--The quality utilization of TB DOTS components of local medical school curriculum increased. However, IR3 was eliminated per the recommendation of the external evaluator during the mid-term evaluation process⁸. This decision was made in order for the project to concentrate on DOT services given the challenges faced by persons with TB and the health workers serving them.

The *SOLUCION TB* model involves strengthening the scope and number of community-linked workers to provide supportive observation of therapy to persons with TB. The premise for the project resulted from the analysis of the reasons behind a poor treatment success rate (58.4%) reported by ISESALUD. Issues of high migration, lack of knowledge about the disease and its symptoms, and stigma and discrimination, were mentioned as the main contributing factors to this poor initial success rate and the lack of adherence to treatment.

ISESALUD was in charge of assigning persons with TB to their *promotoras*. DOT *promotoras* were assigned to individuals for home visits or to facilities where TB services are provided. Mexicali was exclusively facility-based and Tijuana decided on a combined approach. The distribution model was determined by the extent of the problem, barriers faced in each jurisdiction, and results from a prior test pilot implemented by PCI and ISESALUD on a much smaller scale (PCI Mexico files, 2001).

Treatment Success Rates

NPTB and other forms of TB were served by the project. The decision to provide services to both NPTB cases and other forms of TB was in response to a request made by the state TB program. This was done because re-treatment of pulmonary cases was prevalent and also to avoid the appearance of discrimination towards non-pulmonary cases, considering the struggles these individuals face as they are diagnosed with TB. A majority of ISESALUD patients are individuals informally employed, or without a job, which means they do not have access to a regular health care system as they are not insured. Besides the impact a TB diagnosis might have on a person's mental health, the disease itself may force the patient to stop working as they are physically unable to continue. Other mental health issues related to shame, guilt and rejection—whether real or perceived, also affect the wellbeing of an individual with TB. Facilitating and empowering *promotoras* to serve TB infected people who sought care was also seen as the most viable strategy to promote treatment adherence and thereby avoid multi-drug resistance and other

⁸ Page 10 of the MTE report reads “*Recommendation: Eliminate efforts to educate doctors-in-training. While a worthwhile endeavor, other SOLUCION TB activities are of higher immediate priority*”.

complications of treatment default.

The average treatment success rates for individuals served by SOLUCION TB for the 3 years⁹ of data available (2005, 2006 and 2007) averaged 87% in Mexicali and 74% in Tijuana.

Figure 2. Treatment success rates; Comparison between persons with TB served by SOLUCION TB and persons with TB served by the Ministry (including SOLUCION TB). Tijuana, Mexico (Cohort information for 2008 not yet available at the time this report was written).

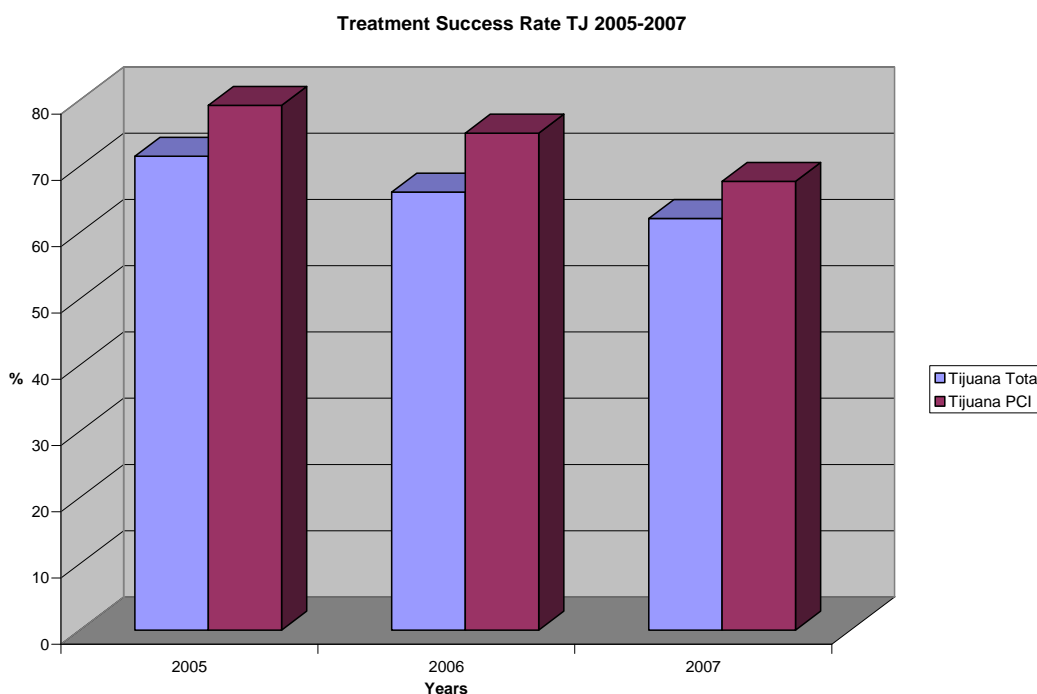


Figure 2 above shows treatment success rate results for Tijuana, indicating the difference between total cases with TB treated by ISESALUD in Tijuana, and those served by SOLUCION TB through the *promotoras* and DOTS workers. Higher rates for individuals served by the project are evident; however, treatment rates as a whole increased from the initial baseline of 54%.¹⁰

Treatment success rates for Mexicali are presented in Figure 3 below. The increase in treatment success rates in Mexicali proved to be greater than in Tijuana. Potential reasons for this difference include a smaller caseload of NPTB cases, easier access to health services (in terms of topography), and reportedly lower rates of HIV and substance abuse¹¹. Additionally, leadership styles from TB jurisdiction managers were different in Tijuana and Mexicali. For example, the head of the program in Mexicali would make decisions and implement them in a more timely fashion and some times without the participation of all core management partners (from PCI and from ISESALUD).

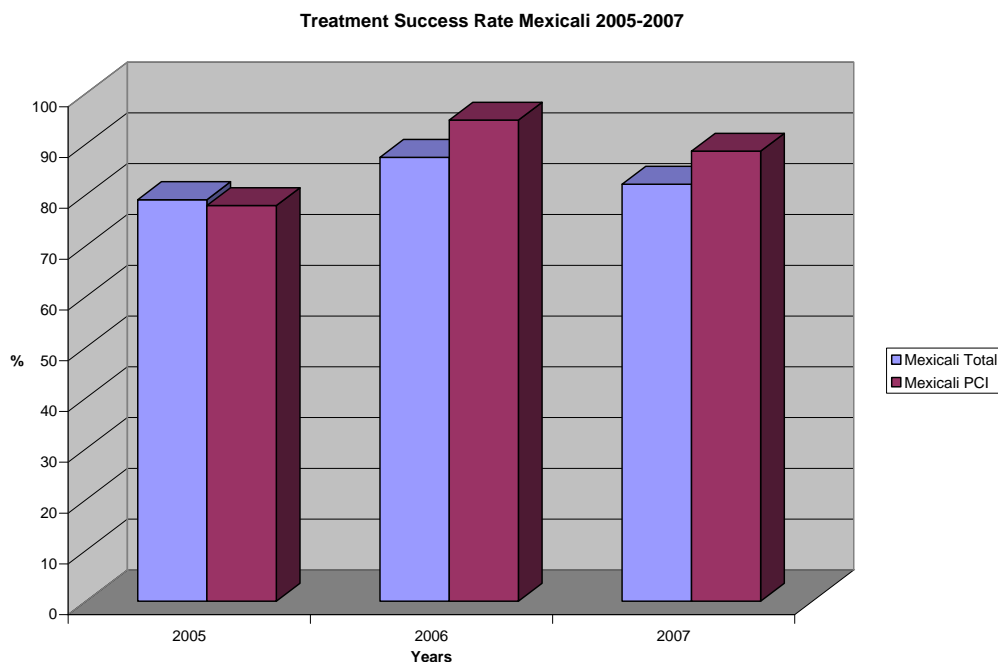
⁹ Cohort information for 2008 is estimated to be available by September 2009

¹⁰ Data is reported only for NPTB cases.

¹¹ Other contextual factors are mentioned later in the report.

Other contextual factors that represented differences between the two jurisdictions include the fact that both utilized a different approach to service provision—all persons with TB in Mexicali received services at the clinics they were assigned to, and home visits were utilized only when individuals failed to show up. Mexicali also acknowledged the utilization of a combination of DOT (strict daily observation) and a managed self-administered option where persons with TB were seen weekly or thrice weekly. In the municipality of Tijuana since the inception of the project the jurisdiction head attempted to adhere to strict DOT (daily) and utilized a combination of home-based and clinic-based services. The decisions as to where services were based were made by the TB chiefs in both jurisdictions and were based on lessons learned from a prior project that was funded by PCI in the past.

Figure 3. Treatment success rates; Comparison between persons with TB served by SOLUCION TB and persons with TB served by the Ministry (including SOLUCION TB). Mexicali, Mexico (Cohort information for 2008 not yet available at the time this report was written).



These results indicate that in both jurisdictions, higher treatment success rates were achieved in 2006 than in 2007 or 2005. Given that the project began in late 2004, actual enrollment of persons with TB into the project started in early to mid-2005. The best joint implementation experience and dynamic collaboration is reflected in the 2006 data. In 2007, staff turnover at ISESALUD constrained the project to continue at its previous level.

The project’s original design relied on a highly participatory approach and its implementation reflected joint decisions throughout. When the project was designed and initiated the main decision-making representative at ISESALUD was very supportive and fully engaged. The existing hierarchy in place at ISESALUD calls for decisions to be ultimately made by the State TB Director and approved by his or her supervisors and a strong advocate within the system is extremely valuable. Even though the project enjoyed a participatory process for analysis and

decision-making throughout, we failed to anticipate the impact that the departure of our main contact at ISESALUD would have on our ability to work effectively with and within the state TB system.

Treatment Default Rates

Default rates decreased in both jurisdictions. For Tijuana, the final external evaluation documented a “significant decrease in treatment default and increased treatment success over 2006-2007 in Tijuana”. The report indicates a difference of 7 percentage points between default rates in Tijuana of those individuals served by SOLUCION TB and individuals served by ISESALUD (12% vs. 19%). In Mexicali, a decrease in the treatment default rate was also achieved. This was especially evident in persons served by SOLUCION TB compared with those served by ISESALUD (6.9% vs. 9.2%).

This is a remarkable achievement considering the contextual factors present in both cities. In Tijuana, for example, immigration from central and southern Mexico continues to be high. Increasing rates of HIV/AIDS continue to be reported. In fact, Tijuana accounts for a majority of the HIV/AIDS cases in BC which reported high rates of mortality due to AIDS during the years the project was implemented¹² and ranked 3rd in terms of AIDS mortality in the entire country.

DOT Promotoras

Key to project implementation was the quality, commitment, knowledge and capacity of the DOT workers or *promotoras* recruited for this project. Starting in early 2005, two teams of *promotoras* working in Mexicali and Tijuana were identified by PCI Mexico and ISESALUD. Trainings were organized and provided by both agencies; ISESALUD provided technical TB-training while PCI provided non-technical TB training. Trainings provided by ISESALUD included epidemiology of the disease, early detection, treatment, testing, reporting, and infection control. PCI provided training in inter-personal communication, person-centered approaches, gender and equity, and TB and HIV co-infection.

Regular meetings with *promotoras* took place in each jurisdiction and were facilitated by PCI. Meetings were held to analyze progress, detect and prevent implementation problems, provide *promotoras* with a forum to share experiences and to incentivize their commitment to the project. Monthly meetings were attended by a representative of ISESALUD—in most cases the head of the TB department in Mexicali—and by a representative of the TB department in Tijuana. These meetings were well received and appreciated by the DOT workers as a forum to showcase their best work and to learn from their peers.

Additionally, semi-annual meetings were held throughout the implementation of the project which brought together the *promotoras* from both jurisdictions, the management team from PCI, and ISESALUD team members. Specific technical update sessions were scheduled at each of these semi-annual events, along with motivational trainings. An important task for each of these meetings included the identification of ‘success stories’ by small groups of *promotoras* who in

¹²AIDS Mortality Rate in Baja: 9.2/100,000. INEGI/SS. Mortality Registry 2006.

turn selected one to be presented to the entire group. At the last joint meeting in September of 2008, the DOT *promotoras* were presented with a certificate of recognition signed by Dr. Martin Castellanos, National Director of TB in Mexico.

One of the main lessons from the SOLUCION TB project was identified in this area. To a TB affected person *promotoras* represent a bridge to health education, health services and one-on-one support. These health workers offered services that were centered on the person rather than on the disease or even the health center. *Promotoras* tend to social, mental health, and overall wellbeing issues that persons with TB struggled with. For example, referrals to substance abuse services were done on a regular basis by *promotoras*. Assistance for medical appointments and lab tests were a constant. *Promotoras* consistently went above and beyond the call of duty to accompany persons with TB to the laboratory when they learned an individual's samples had been rejected, or appointments denied for external reasons. One after another, testimonies from persons with TB (many reflected in the Voices and Images project) accounted for life and death situations as perceived by the individuals affected by the disease.

Several persons with TB (PTB) indicated a desire to abandon treatment for reasons related to stigma, or the perception of stigma. As some individuals served by the project reported, stigma on occasion comes from 'within' and results in self-discrimination, not wanting to engage in social or family activities even as their *bacilloscopy* results indicated they were no longer infectious and, as such, posed no risk to others. In other instances, PTB reported discrimination evidenced by the way services were provided by health service providers (longer waiting periods, lack of confidentiality, physical distance kept between provider and patient which prevented actual and complete medical examinations, etc.).

Because of their care and commitment, *promotoras* offered a different quality and opportunity for service delivery. These motivated, dedicated health workers in charge of supporting TB control efforts allowed health centers to better serve persons with TB and/or reduced 'external' stigma and discrimination as they served as role models for good quality, person-centered services.

Another lesson the project learned and applied to the SOLUCION TB Expansion project (STBE) is related to the 'integration' of *promotoras* into the day to day operations of the health clinics. Initially, the group of *promotoras* hired and trained by an external organization struggled to reach the proper balance between an external and internal identity. *Promotoras* were hired as designated and exclusive TB resources and the existing dynamic in the health centers requires for all health workers to support all activities for over 20 priority projects offered to the population at large. *Promotoras* declined invitations and indications to carry out activities beyond TB, which created resistance from other health workers. Initial meetings were held with jurisdiction staff, and with directors from health centers, to present the project and to clarify roles and expectations, nonetheless, due to personnel attrition or staff attitude, confusions prevailed. Step by step, *promotoras* carved a place for themselves and the support from jurisdiction staff was key to a successful integration. Building on this experience, the STBE included a stronger, clearly defined strategy to clarify the project and its *promotoras* roles from the outset.

Training and Quality Assurance:

The DOTS approach itself is a methodology designed to ensure quality in treatment compliance and provide wider access to medications and health services. In principle, BC follows the Mexican NTP norms and protocols, which are based on international guidelines regarding DOTS strategies for which one of the elements calls for *daily observation* of treatment intake, 5 times a week for persons undergoing the intensive treatment phase, and 3 times a week for those in the maintenance phase, which last respectively 2 and 4 months each. The need for better DOT motivated the hiring of the *promotoras* in the first place, to ensure treatment adherence and completion.

The project utilized “quality circles,” a system by which the project coordinator, community coordinator, designated ISESALUD representative, and one or two *promotora/es* and/or ISESALUD-based DOTS personnel (on a rotating basis) met on a quarterly basis with health center staff from ISESALUD, to review performance indicators, review data and discuss relevant critical information. Corrective measures and recommendations were proposed and addressed by the project or forwarded to ISESALUD, as appropriate. A total of 17 quality circle meetings and reports were completed and submitted by PCI coordinators in Tijuana and Mexicali. A quality improvement manual was developed and distributed at the beginning of the project. The manual provided detailed information on the quality circle methodology and on quality improvement verification checklists (QIVCs) which were utilized to measure the quality of services provided by *promotoras*.

An estimated 20% of the *promotoras* were randomly selected on a monthly basis and visited by a project coordinator who completed one QIVC per visit. Two versions were developed, one for home-based services and another for clinic-based DOT services. A total of 128 monitoring quality assurance visits were completed by project staff (82 in Tijuana and 46 in Mexicali).

The project invested time and resources in the selection and training of the *promotoras*, and the training of different groups of health workers, private and public, throughout its 4 years of implementation, to promote DOT and timely diagnosis. Information on trainings carried out by the project, a list of topics, audiences and # of participants per jurisdiction is provided in Table 2. The trainings and workshops listed below were coordinated and implemented by SOLUCION TB. Initial training on TB provided by ISESALUD for all *promotoras* is not included in the list.

Table 2: List of trainings and presentations carried out by the SOLUCION TB Project (Source: Project files)

Audience	Topics	# of participants, Mexicali	# of participants, Tijuana
Physicians	HIV/AIDS and Tuberculosis	28	112
<i>Promotoras</i>	MDR TB	13	20
Health workers (physicians, nurses and <i>Promotoras</i> from ISESALUD)	Stigma and discrimination in TB	36	48
<i>Promotoras</i>	Substance abuse and TB	11	19

Audience	Topics	# of participants, Mexicali	# of participants, Tijuana
Promotoras and ISESALUD health workers	Infection control Tools (in collaboration with Project Puentes)	17	22
Private physicians	Presentation of SOLUCION TB and key TB messages	40	210
Medical students	Presentation of SOLUCION TB and key TB messages	58	60
ISESALUD staff and private physicians	Infection control	38	132
Promotoras	Gender and TB	16	20
Promotoras	Inter-personal communication	14	20
Persons with TB	Voices and images, basic TB information	13	11
Promotoras/es de Salud	First Aid		15

Management and Coordination

SOLUCION TB's person-centered approach represented a change from what is traditionally the way services are provided in ISESALUD health clinics, where services tend to be impersonal and no dedicated personnel are in place to exclusively address the needs of persons with TB.

The management mechanism for the project involved establishment of a key, participatory group of representatives from PCI and ISESALUD which would meet, analyze progress and make decisions on a regular basis. Meetings were scheduled to take place 3 times a year. More often than not, management meetings were delayed as per ISESALUD's workload. The management of the project went remarkably well during the first 2 years of project implementation. Collaborative management meetings took place regularly; decisions were discussed and analyzed. The development of the detailed implementation plan took place mainly over a 2-day workshop attended by TB coordinators, and jurisdiction and health-center level participants from the jurisdictions of Tijuana, Mexicali and Ensenada. HIV/AIDS program representatives from the different jurisdictions also participated in the implementation planning. Also, representatives from the San Diego County TB Department were present and participated in the project design. The head of the TB department for BC even attended the presentation of the DIP at the Mini-University organized by CSTS (Child Survival Technical Support) with USAID funding in Baltimore, in 2005.

The project seemed to be *institutionalized* in its operations, reflecting good collaboration between the two partners, ISESALUD and PCI. However, changes took place in ISESALUD which affected the SOLUCION TB project in early 2007, starting with the replacement of the Secretary of Health, along with several other key department heads throughout the Ministry of Health. One key change that had a major impact on the SOLUCION TB project was the promotion of Dr. Guadalupe Felix, head of the TB department in Baja California. Dr. Felix was promoted outside the TB department in the beginning of 2007 and a replacement was not in place until May of 2008. Dr. Felix's absence left a gap in the decision-making process for the

project, for over a year. The absence of a principal contact person within ISESALUD affected timely collaboration and communication with project partners as decisions were not made by ISESALUD without the blessing of the State. Management meetings were scheduled to be held every four months for data to be reviewed, progress to be assessed and decisions to be made accordingly. Unfortunately the number of management meetings was reduced in 2007 and 2008. This situation was discussed both with USAID and with the NTP in person and in writing on a regular basis until the project's conclusion in 2008. Both agencies attempted to address the issue and discuss the situation with the State TB program and the Secretary of Health for BC on several occasions, with no positive concrete results.

Monitoring and Evaluation:

Systems to collect data were discussed from the project's inception, and throughout the first year of implementation. During the DIP preparation, agreements between PCI and ISESALUD were made to a) avoid the duplication of monitoring systems and b) establish a data-base to be used for project monitoring and analysis. Initial actions included the development of a preliminary database, and monitoring and reporting formats. The formats were to be utilized by field-workers (*promotoras*) and entered into the database by a PCI-hired worker housed at the state level. The database was designed to provide information on treatment adherence and *promotora* performance (daily versus self administered therapy (SAT) visits for example). ISESALUD agreed to provide cohort information to SOLUCION TB on an annual basis. However, data was not provided on a timely basis, the reporting format deemed not appropriate by the external mid-term evaluator, and the new format, although approved by both parties, was never implemented.

The new reporting format called for the documentation of the DOT and SAT processes taking place on a regular basis mainly in Mexicali, as the treatment cure rates prove the format was successful. However, as SAT goes against the Mexican TB norm which calls for exclusive DOT, the format created to compare and evaluate the effectiveness of SAT and DOT models under SOLUCION TB was never implemented.

As a result, data available to SOLUCION TB was limited and not official and, as such, not used effectively in planning or advocacy. Cohort information was not generated in a timely manner, and the subject became more complicated after the changes in TB staff inside ISESALUD noted above. The project struggled to implement data collection, analysis, and feedback workflow process without success.

The fact that the revision of the SOLUCION TB database as recommended by the MTE was not accomplished became an issue of growing concern for the project. Although this situation was shared with ISESALUD, and commitments were made to improve it, the database issue was not resolved. Sometimes obtaining basic information from ISESALUD on key project data became impossible.

The MTE process was carried out in 2006 by a qualified external evaluator and provided very important information for the project. Recommendations were addressed and incorporated into the work plan for Years 3 and 4. The final external evaluation that took place between August and October 2008 was also useful. Although the final report has not been officially made

available to PCI, preliminary drafts have been shared and feedback has been provided by PCI to the external evaluator.

Sustainability:

From the start, the sustainability of key elements of the program, as well as the creation of long lasting results, was considered an important priority for the project, both for PCI and ISESALUD. Sustainability was also a priority issue raised by the then National Director of TB control, during proposal writing and DIP preparation and submission processes.

Key elements of design and process that would have the greatest impact on sustainability were identified. For example, quality trainings aimed at building the ongoing capacity of project staff, private physicians and partners to address and respond to TB control challenges in the region were implemented. The promotion of person-centered DOT and education on elimination of stigma and discrimination were two additional topics of focus related to sustainability that the project concentrated on.

In addition, the empowerment of persons with TB and key decision makers was one of the main mechanisms implemented to increase awareness and demand for quality TB control services. These two audiences were identified and involved in the project through the Voices and Images project with good results, especially during the last year of project implementation.

The management mechanisms utilized and modeled in the project should also contribute to the ongoing improvement of decision making and coordination. Quality circles, proactive coordination and engagement for joint decision making, and the attempted use of data for decision making are all skills that hopefully will remain in place after the project ends.

Additionally, the memorandum of understanding signed between SOLUCION TB and ISESALUD included the absorption of 10 of the 39 workers hired by the project to address issues of treatment adherence and completion. The phasing in of new *promotoras* was scheduled to take place gradually in years 2, 3 and 4. However, not one of the 10 health workers scheduled to be hired by ISESALUD was actually hired and ISESALUD informed PCI that the State's budget did not allow for the absorption to take place as planned.

Because of the way the SOLUCION TB budget was developed, a slight reduction in DOT staff took place in years 3 and 4, which called for adjustments needing to be made to accommodate for the reduced availability of resources. In order to protect services to persons with TB, the first health workers to be let go were those providing mainly administrative support, which also posed administrative and coordination challenges for the project, but ensured DOT services continued to be provided as planned at least at the beginning of the project. The difficulties in the execution of management meetings due to the absence of a head TB representative contributed to the overall problems faced in this area.

The involvement of the NTP and the USAID mission representative was useful but unfortunately did not ultimately yield positive results on the absorption issue. To this date, the National TB Director continues to attempt to put pressure on the state health system towards this end. PCI

participated in a bi-national TB seminar which took place in Tijuana on November 2008, which included representatives from local and bi-national agencies working in public health. At the event, the Secretary of Health declared that TB would be a public health priority in BC. He publicly thanked PCI and the SOLUCION TB project for its many contributions.

During the final evaluation process, a meeting took place in August 2008 where the external evaluator presented preliminary results to the Secretary, Under-secretary and Director of Health Services for BC. TB managers from Tijuana and Mexicali were also present, as well as the deputy director for TB control in Mexico, Dr. Martha Angelica Garcia. PCI and the external evaluator emphasized the importance of the project results and highlighted the main challenges remaining after project completion. The Secretary insisted on the fact that the ‘hiring of the DOT staff’ was not really a problem for the state, and stated that he required additional information before proceeding. To this end, SOLUCION TB and the STBE have submitted I-STAR and ACSM plans developed by ISESALUD staff participating in planning processes facilitated by PCI in September and December 2008. PCI hopes that both plans will be useful tools for the Secretary and his team.

As much as the project contributed to improving both conditions for persons with TB and the control of TB in BC, the political support the project aimed to maintain/secure was unfortunately not achieved. In a way, the project may have provided ISESALUD with an opportunity to redirect its attention away from TB to other priority programs, by providing TB-focused resources and training that otherwise may have been provided by the government. This is an important lesson for PCI to follow closely in its STBE, and which is being addressed from the beginning through a variety of ACSM interventions at different levels inside and outside of the Ministry of Health.

The identification of internal and external audiences for ACSM, the positioning of TB as a public health priority through advocacy, communication and social mobilization, and the involvement and capacity development of Ministry of Health staff are all part of the mechanisms intended to raise awareness, and position TB control high in the public health agenda throughout Mexico through STBE, based on the experience gained through SOLUCION TB in BC.

III. Summary of Activities per Year:

Main Activities for Year 1:

One of the main accomplishments in Year 1 was the development of the DIP in coordination with key partners. DIP preparation and submission activities included:

- Core staff, government personnel, and other key stakeholders orientated and commitment to the project secured;
- Decisions made regarding project administration and logistics for administering project activities from Tijuana and Mexicali offices;
- Recruitment and training of project *promotoras* (including orientation to the project and co-infection issues);
- Negotiations regarding the memorandum of understanding between PCI’s local partner

Medicina Social Comunitaria and ISESALUD, especially regarding the phased-in approach to incorporating some of the *promotoras/es* into the ISESALUD structure;

- Discussions and decisions made regarding payment structure for the *promotoras*;
- Discussions and decisions made regarding criteria for inclusion of patients into the project;
- The development of a Quality Improvement Manual;
- Ongoing coordination and communication with USAID/Mexico City's TB Coordinator, as well as with key ISESALUD staff;
- Coordination with ISESALUD on final joint DIP presentation and submission in June 2005 at the "mini-university" in Baltimore, Maryland, including development of a summary power point presentation.

Key project activities after DIP submission:

- Adapted the Integrated System for Transformational Assessment and Results (I-STAR) capacity assessment tools and facilitated an assessment and prioritization of capacity-building activities, including an assessment of participants' perspective of project's progress (September);
- Determined appropriate baseline values in each of the sustainability framework dimensions (August);
- Met with key stakeholders from ISESALUD to officially present qualitative data and revised project plans, solicit their input on these plans, and incorporate their suggestions into the DIP presentation (June);
- Facilitated a first 'quality circle' process with community-based staff in Mexicali and Tijuana (July);
- Adapted and designed informational materials to support education and awareness (September);
- Conducted a second joint meeting with *promotoras/es* from Tijuana and Mexicali to offer technical refresher training; training in Appreciative Inquiry to increase motivation and improve communication, and assess *promotoras/es*' perspective on progress to date (September);
- Carried out first presentation/meeting with private physicians in Tijuana; set up follow-up meeting in Tijuana (November 2, 2005) and first presentation in Mexicali (October 25, 2005);
- Conducted additional qualitative research with at-risk populations (rehabilitation centers) to further explore adherence factors. Analysis is in progress (September);
- Quarterly Management Team meetings held as planned (completed for the year);
- Facilitated team's year-end reflection process and incorporated results into annual report (October);
- Procured and delivered equipment (backpacks, pill cases, pill cutters, paper cones, water bottles, t-shirts and caps for health worker) to support project implementation computers, computer case, printers, digital camera (May-September);
- Translated work plan and developed summary power point presentation in Spanish. Shared with and distributed copies to Management Team (July and September).

In addition, PCI's main implementing partner, ISESALUD, carried out the following key activities during the last half of Year One:

- Issued and provided *promotoras* with picture identification cards to facilitate community work (August);
- Enrolled SOLUCION TB *promotoras* in its 'Seguro Popular' (People's Insurance) program, free of charge (September);
- Coordinated installation of phone lines/extensions for key management staff to facilitate communication with project staff (August-September)¹³;
- Coordinated development of project's internal data-base for assessment of treatment adherence (September);
- Coordinated logistics for patients' assignment and distributed to *promotoras* accordingly (May-September);
- Informed medical clinic staff about the SOLUCION TB project and the role of the *promotoras* (May-September);
- Facilitated attendance of key ISESALUD staff at coordination, management and training events (ongoing);
- Developed and presented technical TB update presentation to be utilized in meetings with clinical staff (physicians and nurses) (August-September);
- Assisted with coordination of presentation for physicians in Tijuana and Mexicali; made technical presentation for physicians in Tijuana (September);
- Made initial contact with universities to be involved in the project (July-August);
- Coordinated logistics for qualitative research study to further assess adherence factors for TB patients in Tijuana (August-September);
- Assigned 20-30 % of state and jurisdictional managers' time to the project (ongoing).

Main Activities for Year 2

In 2006, 285 persons with TB were served by SOLUCION TB in Tijuana and Mexicali. Two semi-annual meetings, 3 management meetings, and 2 trainings/presentations for private physicians took place. A key activity for year 2 was the implementation of the mid-term evaluation carried out by an external evaluator, Dr. Kathleen Moser. The evaluation was a collaborative process and had the participation of Dr. Elizabeth Ferreira, then National Director of TB Control for Mexico. Project staff and *promotoras* were also part of the evaluation team.

MTE Conclusions

- The *SOLUCION TB* project has increased DOT capacity in Tijuana and Mexicali. The model of specialized community-level TB outreach staff is on target to improve treatment success. DOT staff is committed and motivated. Involvement of health centers is important for success.

¹³ LLR1.4 Indicator 1. # of ISESALUD TB managers reporting improved communication with colleagues via internet

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- Sustainability will depend upon allocation of public and private resources and political commitment even beyond increased financial resources. This is a program that requires changes in attitudes, disposition and commitment. Government and private funding organizations have not been adequately engaged; on the other hand, the project has been successful at involving the National TB program and negotiated its expansion to an additional 12 States in Mexico. Key findings and data have not been fully communicated to decision-makers. Resources for DOT could be maximized through partnerships between ISESALUD and existing community organizations.
 - The training and education provided within the *SOLUCION TB* model has been effective. Longstanding practices, issues, and attitudes that impede progress have started to be identified and acknowledged. Health center staff and private physicians have emerged as critical partners in implementing patient-centered approaches.
 - The co-morbidities of HIV-AIDS, substance abuse, and mental health pose a substantial risk for rising TB morbidity and mortality in Baja California and additional resources should be allocated to support these populations.
 - Systems to collect data have been developed and are in place, yet have not been used effectively in planning or advocacy. Outcomes should be available in a timely manner and analyzed to measure the effectiveness of the *SOLUCION TB* model.
 - Systems of communication, data collection, and supervision are in place. Refinements in several areas could promote efficiency and clarity of effort.

Recommendations

- There should be more flexible enrollment criteria to reflect the mix and transmission risk of patients under treatment in the community. Maintain a blend of home and clinic DOT and assess the relative effectiveness. Develop written criteria to standardize patient assignment to staff.
- ISESALUD should allocate resources for DOT staff. Review options for sustaining and expanding the DOT workforce. Consider costs and benefits of having workers absorbed by ISESALUD versus partnerships with community organizations.
- Increase engagement of HIV programs and drug rehabilitation centers. Identify opportunities to develop partnerships to expand access to vulnerable populations and to support DOT through existing outreach activities and new activities.
- Develop strategies to strengthen health center teams. Involve the centers, and other partners, early in planning for operations that affect their clients, staff, or workload. Enhancing electronic connectivity of the health centers should be considered.
- Share models and ideas with other DOTS/DOTS-Plus expansion initiatives to identify workable local solutions for sustainability and expansion. Share international standards of TB control with decision-makers to demonstrate alignment of *SOLUCION TB* with worldwide standards. Develop a specific strategy for engaging decision-makers and social organizations.
- Expand training in co-morbidities, such as HIV, mental health, and drug abuse. Sessions for private physicians should be expanded through work with medical societies. Eliminate efforts to educate doctors-in-training. Written materials should be created to keep partners informed and expand awareness. Staff training should be streamlined and patient-focused.

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- Develop one specific strategy for engaging patients in community awareness and mobilization activities. Patient satisfaction assessment should be a standard element of project evaluation.
 - Review data at regular intervals with relevant partners to ensure realistic strategies for quality improvement are designed and implemented. Agree upon and analyze data in ways that will provide improved clarity for planning and advocacy purposes. Review data to ensure all collected information is used for well-defined purposes.
 - Create a policy and procedure manual, which includes forms and instructions, workflow charts, patient selection and assignment criteria, supervision standards and data management schedules. Include policies to standardize outcome analysis of patients on self-administered doses.

Main Activities for Year 3

During its third year of project implementation, SOLUCION TB reports the following achievements:

DOT

- A total of 299 new pulmonary TB patients were provided with DOT services by SOLUCION TB *promotoras*. Additional patients also received DOT services from *promotoras*. The latter are not ‘new pulmonary TB’ patients but included re-treatment and non-pulmonary TB affected individuals.
- Treatment completion and cure rate averages for SOLUCION TB patients was 80% for FY07. A lower rate was achieved for Tijuana (65%) than for Mexicali (95%) as a result of the challenging environment in Tijuana. Rates are better within SOLUCION TB than for non-SOLUCION TB supported patients in the same areas.
- The DOT model was revised to incorporate a SAT option based on medical inclusion criteria. Two alternatives were created—daily DOT, and thrice-weekly DOT for qualifying patients. The model was reviewed and approved by the management team and the DOT *promotoras* have been trained in the new formats. SOLUCION TB is waiting for final approval from the State TB program before beginning implementation. It has been challenging to obtain official approval for the document recognizing SAT as it is not considered the ‘norm’.
- The *promotora* DOT weekly report was revised and modified. The new monthly format provides direct information on type and level of activity (DOT supervisions). The former weekly report is no longer utilized to assess *promotora* performance as recommended in the mid-term evaluation.

Training

- DOT *promotoras* and SOLUCION TB staff were trained in substance abuse issues. A group of 25 DOT *promotoras* from Tijuana attended a joint training with the Preve-TB¹⁴ project on DOT, substance abuse and high-risk patient issues.
- DOT *promotoras* and SOLUCION TB staff were trained in HIV/AIDS and the dual

¹⁴ Preve-TB is a research project implemented in Tijuana, Mexico, by the University of California San Diego in collaboration with Mexican organizations and funded by USAID.

epidemic of HIV/AIDS and TB. This training took place in September 2007 in Tijuana.

- Forty-seven private physicians were trained in DOT and the dual epidemic of HIV/AIDS and TB and sensitized to the interventions provided by the SOLUCION TB program. An additional 33 private physicians in Tijuana received information on infection control and the SOLUCION TB model.
- DOT *promotoras* were trained in stigma, mental health issues and infection control during the first *promotora* meeting of 2007, which took place in Mexicali.

Advocacy and Communication –Selected Activities

- The SOLUCION TB webpage was completed (www.soluciontb.org). The webpage will be used to improve communication among project staff, to improve awareness of key issues among health workers, and to promote the SOLUCION TB model and increase support for TB control.
- The SOLUCION TB model was presented to an audience of approximately 50 individuals representing health agencies from the US and Mexico at the Annual Meeting of the United States-Mexico Border Health Association (USMBHA) which took place in South Padre Island, Texas in May 2007.
- The SOLUCION TB model, including lessons learned and innovative strategies, was presented to CORE¹⁵ partners during a meeting in Washington DC in April 2007.
- The SOLUCION TB model was introduced to State TB coordinators from the 32 Mexican States at their annual evaluation meeting organized by the National TB program in November 2006.
- A ‘lessons learned’ presentation on SOLUCION TB was made at a National meeting attended by the 13 heads of TB control which took place in Mexico City in January 2007.
- The Voices and Images project began in Tijuana and Mexicali, based on the ‘photo-voice’ methodology.
 - One group of persons with TB participated in each SOLUCION target region. Eight patients in Tijuana and ten in Mexicali completed three and two sessions respectively. The groups collectively took over 100 pictures and selected a total of 15 to be utilized on Advocacy Communication and Social Mobilization (ACSM) activities.
 - An advisory group for this project component was selected. Members include representatives from the private sector, academia, business and the health care community. The first meeting with the advisory committee is scheduled for October 2007.

Main Activities for Year 4

A total of 397 persons with TB received services through SOLUCION TB in Tijuana and Mexicali. More services were provided through the clinic-based format in Tijuana than in previous years, as the methodology was deemed more productive. Two semi-annual meetings with *promotoras* were carried out, and only two management meetings took place.

¹⁵ The CORE Group is a membership association of international NGOs. [Http://www.coregroup.org](http://www.coregroup.org).

The Voices and Images project continued to be implemented and yielded excellent results, as an audience of over 500,000 people were reached by information/awareness services over 5 weeks of ACSM activities taking place around World TB Day. Interviews in TV, radio and printed media took place in Mexicali and Tijuana. The Voices and Image's advisory committee met 5 times during the year to plan, carry out and assess results.

Monthly meetings with *Promotoras* and the 2 semi-annual meetings were used to carry out training and planning for the upcoming end of the project. *Promotoras* were trained in mechanisms to inform the persons with TB assigned to their care, of the approaching conclusion of their services. The management meeting was used to develop plans with ISESALUD regarding continuation of services for persons with TB enrolled in the project whose treatment needed to continue. The presentation of preliminary results from the external evaluator which took place in August 2008 and had the participation of the Secretary of health, was used to discuss issues of sustainability of results, given the progress achieved in treatment cure rates, improved adherence to treatment and decreasing treatment abandonment rates. It was agreed that *sustainability* meetings were to take place inside ISESALUD, between jurisdiction heads and TB jurisdiction chiefs with health clinic directors. A *sustainability* meeting took place in Mexicali with nurses of all SOLUCION TB project participating health clinics, the head of the TB department, Dr. Ofelia Morales, the head of the State DOTS Netwlr, and SOLUCION TB staff.

The SOLUCION TB project and its main components were presented at several key meetings and conferences: The Border Philanthropy Partnership annual meeting which took place in Tijuana (October 2007); at the IULTD North America conference in San Diego, California (March, 2008), the US-Mexico Border Health Association's annual meeting (May 2008), the APHA meeting in San Diego, California (September), and the US-Mexico Border Health Commission annual health week in November, 2008. The project and its Voices and Images project was shared with PCI global leadership team which took place in Guatemala in XXX, 2008.

PCI was one of the sites visited by an external team of consultants for USAID's TB portfolio review. The SOLUCION TB project hosted a 2-week visit from the team of consultants in the summer of 2008. The visit included an initial presentation session, visits to health centers, interviews with persons with TB and health providers in Tijuana and Mexicali, and a visit to a laboratory in Tijuana. A final debriefing session took place as well. The purpose of the review was not the SOLUCION TB Project per se but the overall TB control work USAID supports in different parts of the world.

A final project evaluation was completed by an external evaluator, selected by USAID, in August-October 2008. A final draft was shared with PCI, although a final report has not yet been approved by USAID. Key messages from the final draft are included below:

External Evaluation Preliminary Conclusions:

1. An approximate 30% increase in DOT coverage has been achieved in Tijuana and Mexicali through expansion of a well trained and committed workforce.
2. Treatment success has been increased and treatment default decreased in the project intervention jurisdictions over the life of the project.

3. Treatment default remains high, especially in Tijuana.
4. The expanding HIV/AIDS epidemic in the region may have a significant relation to default and death during TB treatment, and deserves further exploration.
5. PCI *promotoras* are well trained and highly committed to their patients.

Preliminary Recommendations

1. Conduct surveillance of HIV prevalence among tuberculosis patients. Pending the findings of such surveillance, mechanisms of enhanced integration of TB and HIV services should be explored with existing community organizations targeting marginalized, high risk groups.
2. Further quantitative research assessing determinants of treatment default and death in Baja California, and especially Tijuana, is urgently needed.
3. Maintenance of a project-specific data collection instrument, staff adequately trained to work with data and regular cohort analyses on key project indicators needs to be a priority for the project expansion. Health center directors and head nurses should be included in health center-specific TB data management and analysis as much as is feasible.
4. Clearer coordination with the State health system at all levels (health center, jurisdiction, state) is necessary. A Policy and Procedures Manual should be operationalized from the project's outset in conjunction with jurisdiction level managers. Health clinic staff should be informed regarding roles and responsibilities of *promotoras*/DOT workers early in the project implementation phase.
5. ACSM activities should adopt a clear advocacy component, with a goal towards placing TB higher on the political agenda, fostering political will, and increasing and sustaining financial support for TB control programs.¹⁶ The impact of ACSM activities should be monitored with pre- and post-Knowledge, Attitudes and Practice (KAP) surveys.

IV. Updated Performance Monitoring Plan

Project's progress is reflected in the following table which provides up to date information on the performance indicators and achievements against targets.

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
SO: To increase TB treatment success rates and influence national TB efforts by developing and implementing a <i>SOLUCION TB</i> strategy of Directly Observed Treatment Short Course (DOTS) using <i>promotoras/es and DOTS</i> health workers	1. Treatment success rates (% completion plus cure rates) in project area (Sustainability Dimension 1-Component 1)	58.4%	85%	74.7%	Cohort data for persons with TB only available up to Dec 2007. 2008 information will be available Sep 2009.

¹⁶ "International Standards for Tuberculosis Care."

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
IR1: The “ <i>SOLUCION TB</i> ” model implemented in the departments of Mexicali and Tijuana in Baja California.	1. Cumulative # of new pulmonary TB patients undergoing <i>SOLUCION TB</i> DOTS model strategy	0	1,190	1,193	
	2. % of all confirmed new pulmonary TB cases being treated by ISESALUD that are following the <i>SOLUCION TB</i> DOTS strategy (Sustainability Dimension 1-Component 2)	0	95-100% (1130-1190)	99%	As per project monthly reports
	3. % of all confirmed TB cases being treated that are being treated under DOTS (ISESALUD in general)	48%	95%	N/A	Final data not provided by ISESALUD. Database system changed in 2006
	4. Treatment success rate (% completion plus cure rates) of patients on <i>SOLUCION TB</i> DOTS strategy	0	85% (1,012)	78.17%	Average % reported. Data available until 2007 only.
	5. % of <i>SOLUCION TB</i> DOTS strategy patients who abandon treatment.* <i>* For ISESALUD, this means treatment interruption has surpassed 30 days</i>	0	Decrease to 3%	9.45%	Contextual factors mentioned in pages 4 and 5 of this report
	6. % of TB patients who abandon treatment in DOTS (population)	4.3% Mexicali 15.0% Tijuana 9.8 % Combined	Decrease to 3%	9.2% Mexicali and 12% in Tijuana. 14.1 combined	Overall abandonment rates higher outside <i>SOLUCION TB</i> cohorts

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
LLR1.1: Community-based <i>promotor/a</i> system to increase direct observation of treatment (DOT) for TB patients improved and expanded	1. # of active <i>SOLUCION TB</i> promoters/DOTS workers identified, recruited, trained in DOTS per TB population	0	36 /360 patients per year (180 yr 1)	Yr1-134/212 Yr2 - 34/285 Yr3 - 32/299 Yr4 - 30/397	
	2. Total number of promoters/DOTS absorbed by ISESALUD at EOP. (Sustainability Dimension 3-Component 5)	0	10 at EOP	0	This sustainability issue was discussed at length with state and national TB programs and continues to be a source of discussion in the STBE project.
	3. % of <i>SOLUCION TB</i> DOTS strategy patients undergoing treatment in accordance with standard treatment protocols (adherence)	0	95%	N/A	Report format not deemed appropriate by MTE evaluator. New format not implemented.
	4. # number of TB cases (caseload) per <i>SOLUCION TB</i> DOTS <i>promotor/a</i>	0	5	5.4, 7.3, 7.6 and 13 for 2005, 2006, 2007 and 2008 respectively	Caseload rate increased as # of <i>Promotoras</i> providing clinic-based services increased
LLR1.2: Effective strategies for reaching marginalized, high risk target groups (PLWHAs, substance abusers) developed and implemented	1. % of targeted high risk patients enrolled in <i>SOLUCION TB</i> DOTS, successfully completing DOTS treatment regimen	0	85%	N/A	Data not available from ISESALUD
LLR1.3: Capacity of laboratories to conduct procedures improved	1. # of qualified (certified) lab technicians hired and trained. (Sustainability Dimension 1-Component 2)	0	2	N/A	This LLR and its indicators were eliminated as per MTE recommendation.
	2. # of bacilloscopies completed by technicians per day	20	16-18*	N/A	Same as above

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
	3. % of patients who receive 3 control baciloscopies for adequate TB control per MOH TB norms. (Sustainability Dimension 1-Component 2)	n/a	TBD	N/A	Same as above
	4. % of positive baciloscopies rechecked	100%	100%	N/A	Same as above
	5. % of negative baciloscopies rechecked	10%	10%	N/A	Same as above
LLR1.4: Organizational information and communication systems for DOTS improved and expanded	1. # of ISESALUD TB managers reporting improved communication with colleagues via internet	0	6	5	5 as of the end of 2006, internet and phone lines were installed as a result of the project. Communication improved.
	2. % held versus planned meetings for project staff (Sustainability Dimension 2-Component 3)	0	85%	73% of management meetings (8 out of 11)	
	3. # of ISESALUD TB managers reporting utilization of internet-based logic map (project key informant interviews)	0	6	6	Informal interviews. Webpage designed in place of logic map.
IR2: Political commitment for national and state TB control program improved and sustained	1. ISESALUD budget allocations for NTP activities increased. (Sustainability Dimension 2-Component 4)	\$261,594	10% increase over baseline (in addition to inflation adjustments)	N/A	Data not available from ISESALUD.

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
LLR2.1: <i>SOLUCION TB</i> model strategy approaches, tools and results documented and effectively shared	1. # of individuals receiving information on results, model approaches, lessons learned and tools	0	100/year	550 total	<i>SOLUCION TB</i> lessons learned, project model and Voices and Images presentations were made at a variety of forums.
	2. Number of individuals attending <i>SOLUCION TB</i> seminars	0	100	250	Seminars include technical issues in TB and ACSM-related subjects
	3. Number of social service clubs (Lions, Rotary, etc.) aware of TB control needs and <i>SOLUCION TB</i> activities. (Sustainability Dimension 3-Component 5)	0	6	2	Interventions were limited. 'Red Social' and 'Fundación Internacional de la Comunidad' were 2 key service organizations informed.
	4. % of physicians having attended a <i>SOLUCION TB</i> seminar who report willingness to provide appropriate referrals to DOT providers	0	65%	140 total participants	Willingness not assessed in all workshops
LLR2.2: Dialogue about improving TB policy increased	1. # of contacts established with key decision-makers by <i>SOLUCION TB</i> staff/partners	0	20/year	24	Policy-related activities carried out in years 3 and 4 of project
	2. # of key decision makers that report increased participation in TB policy influencing activities as a result of contacts with <i>SOLUCION TB</i>	0	10	12	Most of the reported and documented participation resulted from voices and images advisory committee members
IR3: Quality utilization of TB DOTS components of existing local medical school curriculum increased	1. # of school training plans demonstrating quality utilization of TB DOTS component	N/A	3 training plans per university (6 total)	N/A	IR eliminated as per mid-term evaluation recommendation.

Strategic Objectives	Indicators	Baseline Value	EOP Target	Progress achieved	Comments
LLR3.1 Increased participation of medical school faculty in <i>SOLUCION TB</i> events	1. # of interviews/meetings with medical school directors to promote the importance and use of DOTS within the medical school curriculum.	0	2 meetings per year with medical school directors in both Tijuana and Mexicali	1	Only one meeting took place before the strategy was eliminated.
	2. # of medical students and faculty participating in DOTS seminars/field work (one-day sessions on campus &/or one day field work with a <i>Promotora</i> or DOTS supervisor) who report their commitment to DOTS strategy and to teaching about DOTS as part of their medical school course load	0	25 students/faculty per semester/city	118 EOP	Year 1 only. Intervention suspended as per MTE recommendation.
LLR3.2 Number of students participating in hands-on DOTS field work increased.	1. # of medical students participating in DOTS seminars/field work (one-day sessions on campus and/or one day field work with a <i>promotor/a</i> or DOTS supervisor) who report their commitment to utilizing/supporting DOTS strategy in their future practices. (Sustainability Dimension 3, Component 6)	0	N/A	N/A	Same as above

V. Project Accomplishments and Lessons Learned

The SOLUCION TB project was the first one of its kind implemented in Mexico where such a strong collaboration and coordination was attempted between a PVO and the government of Mexico's ISESALUD. As a result of the documentation and sharing of lessons from the SOLUCION TB project, a national expansion of the SOLUCION TB project began in late 2006 with a needs-based assessment process. The expansion began in 2007 in twelve priority states, in addition to BC. The expanded project was modeled after SOLUCION TB and the lessons learned incorporated into its design. For example, ACSM was expanded in the expansion project based on preliminary results from SOLUCION TB as well as the needs-assessment process.

Staff from SOLUCION TB, both from PCI and ISESALUD BC, actively participated in the design process for the STBE project.

Project Strengths:

- **Adequate working collaboration:** ISESALUD and PCI teams worked together before the SOLUCION TB project, collaborating in TB mitigation and other health areas in both jurisdictions. Prior collaborative experience paved the way for the identification of the problem and joint proposal-writing and the implementation of the 4-year project.
- **TB experience:** PCI's presence in the region for over 45 years included prior TB experience. PCI has participated in several local and bi-national efforts including Ten Against TB (TATB); the bi-national TB committees of Tijuana/San Diego and Mexicali/Imperial (through the US-Mexico Border Health Association); and in different activities coordinated by the US-Mexico Border Health Association, the NTP program and STOP TB in Mexico. TB experience in community mobilization, training techniques and person-centered approaches complemented ISESALUD's technical expertise. Prior collaborations in TB control (2001) which included a grant from PCI to ISESALUD to hire a small group of TB workers, yielded more than satisfactory results (over 90% treatment completion rates in the 2 jurisdictions).
- **Challenges well defined:** When PCI and ISESALUD first met to discuss the possibility of implementing a joint TB project in BC, it was clear for both partners that the challenges were well defined: the problems did not lie in detection aspects (diagnosis) but rather in treatment completion, as a rate of 58.4% treatment completion was reported prior to SOLUCION TB, compared to a target of 85%. A problem related to low treatment completion was the lack of human resources (DOT workers) dedicated to TB control. ISESALUD also knew about the lack of TB awareness and lack of information on basic TB symptoms amongst the general public, but detection and diagnosis were not considered as much of a priority in comparison to the need to improve treatment success.
- **Complementary systems in place:** In the Mexican TB control program, systems are in place for medication supply, laboratory, detection, diagnosis, information, and supervision/monitoring. This allowed for a narrower definition of the problem for TB control in BC. The SOLUCION TB project represented a complement to an existing structure and system. In PCI, a system of community participation in the form of long-standing, committed *promotoras* was an element that facilitated the collaboration between the two agencies. PCI's expertise in capacity building, training, education and

communication were important aspects of the synergistic partnership.

- **Flexibility of approach.** The project was design to respond to the needs of individuals affected by TB. As part of its approach, timely responses were provided depending on the evolving context and conditions faced by individuals participating in the project. Furthermore, the difference in approaches utilized by the jurisdictions of Mexicali and Tijuana was part of the project's commitment to adapt and better respond to context and needs. Additionally, the project provided important information as to how the readiness level and the different styles of leadership and organizational culture influence project implementation. Delivering on the commitment to be strategic, responsive and adaptive to different scenarios and needs was key to project success.

Main Challenges and How Those Were Addressed:

In summary, the following represent the main challenges the SOLUCION TB project faced during its four years of implementation:

- **Challenge:** At the health center level, there was some degree of confusion of roles for PCI-DOT *promotoras* in both jurisdictions and lack of integration of the project at health center level. Adequate integration includes access to information and records for PTB, their timely enrollment in the project and getting them assigned to *promotoras*, provision of adequate office space, among others.
How addressed: Initial meetings were scheduled to introduce the project, its staff and their roles. An informational flyer was created for this purpose. Additionally, quality circles and monthly monitoring visits included dialogue on clarification of roles and the advantages of integration and collaboration.
- **Challenge:** Lack of knowledge and difficulty in launching ACSM activities, including a degree of resistance to change towards a person-centered approach. Although SOLUCION TB began ACSM activities towards the end of its third year, the adoption of a person-centered approach modeled by the *promotoras* in their day to day work faced a degree of resistance. Lack of awareness of the 'Patient's Bill of Rights' and a resistance to even acknowledge that stigma and discrimination were taking place, contributed to a slow incorporation of a new way of 'doing business'.
How addressed: A reader-friendly '*carta de derechos y responsabilidades de personas con TB*' [*rights and responsibilities of persons with TB*] as modified by the NTP was printed and distributed widely during the last 2 years of project implementation. Framed rights and responsibilities letters were presented in conferences and workshops where SOLUCION TB participated. The Voices and Images project was given a stronger role during its implementation.
- **Challenge:** Data and information sharing. An initial resistance to the sharing of data was evident during the proposal writing process. Agreements were made to avoid duplication of reporting, monitoring and data. Gaps in information relevant to the project were identified during the development of the project's performance monitoring plan. Indicators and sources for information were jointly agreed upon. However, the actual sharing of data did not take place as agreed. Lack of access to cohort information was an important barrier that affected many aspects of the project and affected the spirit of collaboration. The design of STBE includes direct access to cohort information for all

jurisdictions participating in the project, to prevent these problems from taking place.

How addressed: Several attempts were made to change this situation. Agreements were reached but not implemented. PCI invited the participation of USAID and the NTP to try to resolve this situation, but without success.

- Challenge: Lack of true collaboration during the last half of the project. The changes that took place in TB leadership affected PCI's ability to implement the project in a truly collaborative manner, as the participation from ISESALUD became scarce and affected critical decision-making. The lack of scheduled staff absorption directly affected the project's strategy for sustainability of results.

How addressed: As described above, PCI attempted different mechanisms to change things around, unsuccessfully.

Lessons Learned:

Dedicated DOT Workers: Overall, the project demonstrated the need for dedicated, committed and well trained workers who provide TB affected individuals with services that are centered on *their* needs as opposed to the program or the facilities' needs and who can serve as essential bridges between the individual with TB, their family and the health care and other systems. Caring health workers made the difference between life and death for many of the PTB individuals served by the project. Most of the individuals affected by TB that were enrolled in the project struggled with social issues well beyond what the disease itself represented. In terms of health challenges, co-infection with HIV/AIDS, Diabetes Mellitus, and substance abuse were a reality for several of those served by SOLUCION TB. Some individuals cited the need to go back to work as a reason for abandoning treatment and several commented on the difference it made to have a DOT *promotora* assigned to their case. Most *promotoras* were considered invaluable and in many instances the services and support they provided extended beyond the medical aspects of TB.

Cafeteria Approach: The project demonstrated the importance of a flexible approach, and the need to carefully and appropriately match a variety of options with the person with TB and his/her circumstances. The time of day DOT was provided varied depending on the person's availability. The location of the actual observation of treatment also varied depending on where the person with TB might be. Good rapport and regular dialogue ensured that *promotoras* were informed of changing needs and were able to adapt. The project also documented the feasibility of this multiple-choice approach to be implemented for a project that is complex and requires a good amount of structure. The complexity of TB means that treatment needs to be continuous for 105 doses distributed over 6 months, that medical and laboratory tests and visits are needed, and that good infection control needs to be in place to prevent the spread of TB. TB is in many cases a life-changing disease. Its impact can be as positive or as negative as the circumstances that surround the provision of services are and how those services are provided has a direct influence over that impact.

Collaborative Project. SOLUCION TB was an example of a successful partnership between the public sector and a PVO even with the challenges faced. Important improvements to treatment success rates were obtained, which may not have been gained if the partners were working separately. As this project demonstrated, TB control requires both an adequate medical-health

system and an adequate community-based partner to be successful, because issues surrounding TB go well beyond the medical aspects of the disease and include social, economic, educational and other elements linked to a person's humanity. A person-centered approach is therefore likely to be more successful than a purely medical model of care.

The Importance of ACSM. When the project began, the importance of advocacy, communication and social mobilization was acknowledged but there weren't many examples of ACSM *in action*. The utilization of the Photovoice methodology as an ACSM approach that included issues of empowerment of individuals with TB, advocacy and *amplification of communication* strategies, was very useful. Internal ACSM aspects were addressed since the beginning through the type of issues dedicated *promotoras* were addressing, in a person-centered manner. Issues of stigma and discrimination were significant challenges that affected the willingness of persons with TB to adhere to treatment or return for services. A stronger role for ACSM is planned for STBE, and from the start, capacity building interventions and concrete mechanisms such as Voices and Images are contemplated to take place.

Learning Applied to the STBE Model

Person-Centered Approach and Participation of PTB. Regular analysis of the SOLUCION TB progress, including its mid-term and final evaluations, led the team to identify the role of the DOT *promotoras* as an essential element of success. The ACSM component of STBE is in fact an innovation as it is a new concept at the jurisdiction and local levels. The empowerment of persons with TB who participated in Voices and Images under SOLUCION TB actually served as the model for additional Voices and Images implemented in STBE during its initial year and the final year of SOLUCION TB.

Following the STOP TB recommendations related to ACSM, the SOLUCION TB and STBE projects promote and foster the active participation of persons living with TB in TB control. Through a variety of ACSM methodologies and training, persons living with TB have been actively involved in ACSM processes, through testimonies, presentation, participation in Voices and Images. An initial activity included training of health personnel in 12 of the 13 states (the ACSM training in BC took place in December 2008 although ACSM activities began much earlier).

The concepts of 'advocacy' and 'social mobilization' as they relate to TB control were new to staff in BC and in the other 12 states participating in STBE. The concept is often confused with 'health promotion' or equated to the implementation of health fairs. Communication as a concept is slightly better known although behavior change communication (BCC) and adult learning techniques are not always utilized. Amplification of communication techniques (work with Mass Media) is usually done by the social communication departments within the MOH which fall outside the TB control departments' area of influence for the most part.

Based on the SOLUCION TB experience, it became clear that ACSM would need to first be applied to the health care system itself which suffers from stigma, misconceptions and fear which negatively impact care and care seeking behaviors. This awareness of the differences between and need for both "internal" and "external" ACSM was an important lesson that

SOLUCION TB has shared with the STBE.

Empowering DOT. As part of the innovations initiated in the original SOLUCION TB project, STBE has coined and promotes the concept of ‘empowering DOT’ which is used and taught in workshops. The concept itself was born out of the discussions in ACSM in one of the participant states (Oaxaca) that included the concept of ‘transactional analysis’; participation of persons with TB in ACSM. The concept of ‘empowering DOT’ indicates the need to provide Directly Observed Therapy services/strategies in a way that fosters empowerment of individuals affected by the disease and discourages the dependency inherent in DOT; thus increasing self-reliance, taking responsibility for treatment, care and risk reduction, as well as increasing adherence and promoting a rights-based approach to service delivery.

Both projects make a conscious effort to promote the term ‘person with TB’ instead of ‘patient’ to indicate the active role the person with TB should play within the 6 months of treatment and beyond. This is crucial, especially for resource-deprived environments where daily attendance is a challenge and also considering how the emotional status of persons affected can influence adherence. Based on ‘transactional analysis’ and similar to counseling techniques, the concept of empowering DOT highlights the need to provide as much support and information as needed especially at the beginning of the partnership (treatment) between the service provider and the person with TB. In a person-centered approach, the physical and emotional status of an individual as well as their environment and support network influence the likelihood of a positive outcome (in this case treatment completion and cure). The concept designed by the project and MOH partners also considers that this is a *process* and as such is different for different individuals. But, in general, more services and support are required at the beginning of treatment and less towards the end of the 6 months of primary treatment.

ACSM and Voices and Images. During the last year of the project, the implementation of ACSM through a Voices and Images project took place, with the technical assistance from the US-Mexico Border Health Association (USMBHA). The Voices and Images project in BC resulted in an audience of 500,000 individuals reached—significantly higher than estimates by ISESALUD in prior years. Information and awareness messages were disseminated through a variety of mass media outlets including newspapers, magazines, radio stations, TB interviews and electronic media.

PCI entered into a sub-grant with the USMBHA to implement the Voices and Images project in BC and is now expanding and replicating the project into an additional 5-6 states in collaboration with USMBHA. Currently BC continues to implement its Voices and Images project as part of STBE. Plans are in place to expand the project to: Tamaulipas, Jalisco, Guerrero, Coahuila and Chiapas. The voices and images methodology provides an appropriate platform for the participation of PTB through testimonials and development and presentation of photo galleries. PTB who have participated in voices and images have been present at most of the regional technical workshops with excellent results. Several states have now ‘adopted’ the testimonial process as part of their own technical meetings (e.g. Nuevo Leon, Tamaulipas, Oaxaca) in order to increase awareness about treatment adherence, reduce stigma and promote adherence as well as a person-centered approach to services.

Monitoring and Data-Sharing. The STBE project has learned much from the challenges faced in this area under SOLUCION TB in BC. STBE carries out regular monitoring of activities through a web-based data-base, has delineated clear tasks and responsibilities for program managers and DOT workers (*promotoras*) which include monthly reporting and ongoing documentation. Cohort analysis for each of the 35 participant jurisdictions takes place on a regular basis through direct access provided by the NTP. The SOLUCION TB website (soluciontb.org) is used for sharing of information and documentation. Joint cohort analysis activities take place at regional workshops throughout the year to build the capacity of local health staff to analyze TB data and make implementation decisions accordingly. Monitoring and follow-up meetings take place between STBE staff and state TB coordinators, NTP representatives and USAID. Reports from site-visits conducted quarterly are shared by STBE with state representatives, NTP and USAID.