

PIMSA Project: Detection and Follow-up of Latent Tuberculosis Infection (LTBI) among Migrant Workers, United States and Mexico

**HEALTH POLICY IMPLICATIONS**

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**Executive Summary**

This report summarizes the health policy implications for the collaborative PIMSA Project Detection and Follow-up of Latent Tuberculosis Infection (LTBI) among Migrant Workers, United States and Mexico which aims to: demonstrate utility and feasibility of detection of latent tuberculosis infection (LTBI) among migrant farmworkers and to compare outcomes in the US and Mexico and 2) to assess follow-up of workers detected with LTBI and ability to link individuals to care. We recommend the following key health policy recommendations based on this work:

- Provide a more specific and potentially sensitive blood test, such as the Quantiferon-Gold (QFT-GIT), rather than the tuberculin skin test (TST), for LTBI screening especially among high-risk groups.
- Provide targeted testing activities and intent to treat among high-risk groups along the border to assess whether QFT-GIT should replace the TST in routine practice, as well as identify predictive risk factors for LTBI in these populations.
- Educate farmworkers and their family members on LTBI and encourage policies that create easy access, culturally appropriate, and affordable health care for this vulnerable population. Develop public health policies that advocate for the use of QFT-GIT in LTBI screening among the migrant farmworker population.
- Integrate informational materials and training on LTBI, TB, and the health system process in pre-existing programs and community health center initiatives for individuals living along the border.
- Support policies that improve the current border workers' living conditions and provide better follow-up and linkages to care for patients with a positive result.
- Dedicate resources to invest in border public health infrastructure in order to meet the needs of the population including resources for further educational efforts regarding the nature of LTBI and its management.

This document provides further information on each policy recommendation and the impact that these policies have on supporting public health along the border to prevent future TB disease. We thus hope to influence decision-makers in the US, but particularly in Mexico, with regards to the need for LTBI diagnosis, treatment, and follow-up care management.

## **Introduction**

This research project was a collaboration of the University of Arizona (UA), Mel and Enid Zuckerman College of Public Health, and the University of Monterrey (UDEM). The purpose of this project was to 1) demonstrate utility and feasibility of detection of latent tuberculosis infection (LTBI) among migrant farmworkers and to compare outcomes in the US and Mexico and 2) to assess follow-up of workers detected with LTBI and ability to link individuals to care. Despite the work being conducted on TB, there has been little LTBI research on the US-Mexico border.

In our study, two tests were evaluated in the diagnosis of latent tuberculosis infection in a sample of migrant farmworkers working on the US side of the US-Mexico border. We found that more than half of the participants tested positive, much higher than that previously published in the general population in the US (5%) as well as a relatively high estimate, when compared with existing border and migrant estimates on the US and Mexico border regions of between 30-40%. We also enrolled individuals in follow-up case management services through the Migrant Clinician's Network (MCN). However, while associates contacted or attempted to contact each of the participants to provide them with testing outcome information, as well as ongoing health linkages, one of the main challenges we faced was follow-up and retention of individuals in our study. Even with partnerships, adequate individual access to working phones and the ability to locate individuals on the move was an ongoing struggle.

We thus propose the following health policy recommendations, centered around the areas of high prevalence of infection, targeted testing of high-risk populations, factors influencing treatment decisions, increasing awareness and education, and broader structural determinations of health care access and care follow-up.

## **Prevalence of LTBI Infection**

For this population, a test that does not cross-react with childhood BCG vaccination is important, with concerns regarding both costs and adverse effects of LTBI treatment that might occur among false positives. Policies should thus focus on providing the option of a more specific and potentially sensitive blood test, such as the Quantiferon-Gold (QFT-GIT), rather than the tuberculin skin test (TST) for LTBI screening. However, in our study, the proportion of individuals who tested positive by QFT-GIT was greater than those testing positive by TST, indicating that QFT-GIT may be more likely to correctly identify individuals as infected with TB compared to the TST. Given these results, it might be important to consider QFT-GIT among high-risk groups who may not have a detectable TST response, such as diabetics, HIV-coinfected or individuals receiving steroids or immunotherapy. As an example, in populations (such as in Monterrey, Nuevo Leon, Mexico) where the incidence of TB is 20 per 100,000 habitants, this would mean that if each patient had a mean of five contacts, approximately 2,000 contacts would be located in a given year. Given the data from our study, we would then expect 1,200 false negative test results with the TST. This means that many individuals who have LTBI are left untreated and may subsequently progress to active TB disease. This is particularly true in a population with many comorbidities that decrease immune function.

## **Targeted testing activities**

As per US recommendations, targeted testing activities should be conducted among groups at high risk for progression to active TB disease (such as priority groups

that are medically underserved or immune-compromised), with intent to treat if LTBI is detected. However, given the early risk of isoniazid (INH) treatment toxicity, persons diagnosed with LTBI will need to be counseled and instructed to seek medical attention if they develop TB having declined INH treatment. Since no systematic procedures have been in place to screen individuals for latent TB infection, we recommend a study to examine the feasibility of providing infected individuals with testing, follow-up screening and treatment services. The main objective of the proposed study would be to support future studies for investigation into targeted testing activities as well as the feasibility of implementation among border populations. Since LTBI is not routinely diagnosed, testing on the border will potentially allow for diagnosis and follow-up prophylaxis. Additionally, assessing the LTBI status along the border will both provide an assessment of whether QFT-GIT should replace the TST in routine practice, as well as identify predictive risk factors for LTBI in these populations. These results could be of particular significance because of both the costs and adverse effects of LTBI treatment that might occur among false positives, as well as the possible detection using QFT-GIT of immunocompromised individuals.

### **Factors influencing the decision to seek treatment**

The majority of participants showed a preference for QFT-GIT results when deciding whether to seek treatment. Our study demonstrated that access to care and health insurance, family influence, proximity and flexibility of clinic hours, and attitude of health workers would influence the decision to seek treatment. Therefore effort should be geared towards educating farmworkers and their family members on LTBI. Policies

that create easy access, and culturally appropriate and affordable health care for this vulnerable population should be encouraged. We also found that the majority of participants were willing to seek treatment based on a positive QFT-GIT result or a positive TST and QFT-GIT result compared to very few who were willing to accept treatment based on a positive skin test only. The implication of this finding is a suggestion that migrant farmworkers if given choices might choose the QFT-GIT over the TST. This could inform public health policy on LTBI screening in favor of using QFT-GIT among the migrant farmworker population.

Participants considered themselves at risk for TB and saw TB as a health concern. Proximity and flexibility of clinic hours, engaging the family and the community, in addition to easy access, culturally appropriate and affordable health care, should be considered as a strategy to increase the acceptance of QFT-GIT results and prevent LTBI and TB disease in this high-risk population. Finally, educating the farmworker population on LTBI will help dispel rumors and misinformation about LTBI in addition to increasing the acceptance of testing, test results, and treatment.

### **Increasing Awareness and Education**

Initiatives to increase TB awareness and testing and treatment of latent TB infection and disease are thus critical to TB elimination efforts along the border region, as populations repeatedly move and work on both sides of the border. Bi-national public health action to prevent individuals with LTBI from progressing to TB through proper screening and treatment is essential for TB control and prevention, just as has been advocated for active TB. We believe that partnerships should be facilitated between

healthcare providers for LTBI across both sides of the US-Mexico border, considering the border region to be one single unit, with documentation of effective strategies for cross-border notification of movement and treatment coordination.

Additional next steps based on this work could include providing populations on the border with information around TB and LTBI, including trainings and informational materials. Increasing service utilization is a key challenge. Poor communication, government mistrust and misunderstanding of the health system are some of the barriers to effective health service delivery. Explaining the flow of the clinic and health system process for those with TB exposure may provide a significant first step. Such education could be integrated with existing programs and community health center initiatives for individuals living on the border.

### **Broader structural determinants and linkages to care**

Our findings reinforce the need for earlier diagnoses of active TB cases to avoid transmission and consequent high infection rates, as well as contact investigations to identify possible infected partner or family members. Low socioeconomic status in other US populations has previously been linked to increased rates of tuberculosis (TB) disease transmission. Another anticipated policy implication is thus that more attention be paid to current border workers' living conditions, which in many cases likely fuel the propagation of the disease. Finally, better follow-up of patients with a positive result, and linkages to care, will prevent future active disease. This is particularly relevant given that many clinics along the border in the United States, and even more so in Mexico, do not routinely offer follow-up or treatment for LTBI among the broader (albeit high-risk) population. Previous

work has recommended dedicated resources be invested in border public health infrastructure in order to meet the needs of the population. Since LTBI policies are often not well-developed nor standardized, another implication of our work is the need for further educational efforts regarding the nature of LTBI and its management and targeting towards the most affected communities.