

Tuberculosis in Texas Hispanics

Background

From 1987 through 1994, the number of tuberculosis (TB) cases reported in Texas increased by 45%. In 1987 there were 1,757 reported cases; in 1994, there were 2,542 cases reported. From 1994 through 1996, however, the number of reported cases decreased by 17%. In 1996, there were 2,103 TB cases reported in Texas.

The epidemiology of tuberculosis has changed substantially in recent years. Coinfection with HIV, homelessness, substance abuse, and immigration from countries where tuberculosis infection is quite common contributed to the increased number of reported cases since 1987. Foreign-born residents who have immigrated to Texas from TB endemic countries in Africa, Asia, and Latin America now represent a higher proportion of the overall tuberculosis case-load in Texas than they once did. More than one fourth (26%) of all the tuberculosis cases reported in Texas in 1995 were diagnosed in foreign-born patients. Persons born in Mexico represented 61% of all cases in foreign-born TB patients diagnosed in Texas in 1995. Nationwide during 1995, more than 80% of the tuberculosis cases in Mexican-born patients were diagnosed in Texas, California, Arizona, and New Mexico.

Texas Data from the Border State Study

In 1995 and 1996, the Texas Department of Health collaborated with public health officials in California, Arizona, New Mexico, and at the Centers for Disease Control and Prevention (CDC) to study tuberculosis in Hispanic patients along the US - Mexico border. Foreign- and US-born Hispanic tuberculosis patients and suspects seen for any reason in selected tuberculosis clinics from October, 1995 through January, 1996 were recruited for this study. Participating local health departments in Texas included Dallas County, Fort Worth/Tarrant County, Austin/Travis County, El Paso City/County, Webb County, Hidalgo

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County, Cameron County, Nueces County, and the City of Houston. Using a standardized questionnaire, bilingual health department staff interviewed consenting patients. In instances where the patient with tuberculosis was a child, a parent or guardian answered the interview questions. Patients were questioned about their migration history, symptoms, treatment, and healthcare-seeking behaviors. Clinical data also were collected from the patients' medical records; other data were obtained from each state's tuberculosis surveillance database.

Results

Of the 401 TB patients identified in the four states participating in the study, 228 were from Texas; 127 (55%) were male, and 93 (45%) were female. The mean age was 43 years (range = 1 month - 89 years). Sixty-six (50%) of the foreign-born patients had been in the US for at least 18 years (range = 4 months - 81 years). The birth countries were as follows: 117 (51%) from Mexico; 95 (42%) from the US; and 15 (6%) from Cuba, El Salvador, France, Guatemala, or Honduras. The majority of patients born in Mexico came from one of the four Mexican states that share a common border with Texas (Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas). There were small numbers of patients from many other parts of Mexico, including all of the central interior Mexican states.

Eighty-five percent of the patients in this study had pulmonary tuberculosis. The median duration of symptoms before the patients sought medical treatment was 4 months (range: 2 weeks to 11 years). Approximately a third (28%) of the patients interviewed reported receiving prior tuberculosis treatment

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or preventive therapy. Only 8% of the patients interviewed reported receiving treatment outside the United States.

Hispanic patients living in counties bordering Mexico were much more likely to have drug-resistant tuberculosis than were patients living in nonborder counties, regardless of their country of origin. Table 1 compares drug resistance levels of patients living in Texas border counties with those of patients in nonborder counties.

Table 1. Percent of Patients With Drug-resistant TB: Border vs Nonborder Counties

Drug Resistance	Border Counties	Nonborder Counties	Risk Ratio
Isoniazid (INH)	6.9	3.9	1.76
Rifampin (RIF)	1.4	.3	4.66
Ethambutol	2.8	1.3	2.15
Streptomycin	8.6	3.4	2.52
INH + RIF (MDR-TB)	1.1	.3	3.66

Detailed histories of travel to Mexico were obtained from 133 foreign-born study participants. Ninety-six (72%) had traveled to Mexico since immigrating to the US; 56 (58%) had traveled to Mexico within the year prior to being diagnosed with TB. Forty-eight patients (50%) traveled to Mexico at least once a year; 26 (27%) at least monthly; and 13 patients (14%) traveled to Mexico weekly.

CDC supports four binational projects targeting tuberculosis control and prevention along the US - Mexico border. These projects involve collaboration between health officials in neighboring cities on either side of the border. Three of these binational sites are along the Texas - Mexico border (El Paso - Ciudad Juarez; Laredo - Nuevo Laredo; and McAllen/Brownsville - Reynosa/Matamoros). Our study found that at least 60% of the Mexican-born TB

patients we interviewed had ties with a community where a binational project is in operation. The remaining 40% of Mexican-born patients interviewed were from nonborder regions in Mexico.

Conclusions

Immigration from TB-endemic countries contributes an increasing proportion of the newly diagnosed tuberculosis cases in Texas each year. Mexico is the largest single source of foreign-born patients diagnosed in Texas. Although foreign-born patients with tuberculosis contribute an increasing proportion of tuberculosis morbidity in Texas, most (74%) Texas patients still acquire their infection here, and Texas produces more home-grown tuberculosis than many other areas of the United States. The location of the binational tuberculosis control projects seems appropriate, since 60% of the foreign-born patients we interviewed were from Ciudad Juarez, Nuevo Laredo, or Reynosa/Matamoros.

The Hispanic patients interviewed in this study were symptomatic for an average of four months before seeking medical treatment. Only 8% of the patients we interviewed reported receiving prior medical treatment for tuberculosis from providers outside the US. Foreign-born patients are more likely to have drug resistant strains of tuberculosis than Texas patients overall, but current levels of drug resistance remain low. All patients newly diagnosed with tuberculosis should initially be treated with the standard four-drug therapy of isoniazid, rifampin, ethambutol, and pyrazinimide until culture results are available.



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DOT: The Key to Global TB Control

World TB Day, which falls on March 24 this year, was created to bring greater attention to the global tuberculosis epidemic. It commemorates the original announcement in 1882 of Robert Koch's discovery of *Mycobacterium tuberculosis*. World TB Day, however, is not a time for celebration, as the weapons discovered long ago to fight TB are still not properly used. Today, TB is the leading infectious killer of youth and adults. As TB prevalence increases, so does the risk of infection for everyone. Every person who develops drug-resistant TB as a result of incorrect treatment may infect as many as 10 other people yearly with strains that are very difficult and costly to treat.

This year's focus is on directly observed therapy (DOT). The World Health Organization (WHO) Global TB Programme has determined that DOT provides one of the most effective and economical ways to curtail the global TB epidemic. Now the effort is to increase funding for and promote wider use of this proven TB control strategy.

On World TB Day this year, WHO will release of a new report on the global state of the TB epidemic. This reports highlights the current TB situation in each country and documents the extent to which DOT has been implemented.

There are many advantages to using DOT. This strategy

- ◆ **Cures the Patient.** No other TB control strategy has resulted in such consistently high cure rates.
- ◆ **Prevents New Infections.** DOT stops TB bacteria transmission at the source. A patient who is not cured will infect, on average, 10 to 15 other people every year.
- ◆ **Stops MDR-TB.** DOT helps prevent patients from developing incurable forms of TB. Less effective treatment strategies can do more harm than good by actually creating strains of multidrug-resistant TB.

- ◆ **Is Cost Effective.** The World Bank has ranked DOT as one of the most cost-effective health interventions.
- ◆ **Is Community Based.** DOT does not require hospitalization, new technology, or a new health care structure. Rather, DOT uses existing primary health care systems more efficiently.
- ◆ **Extends Lives of AIDS Patients.** At one-hundredth the cost of AIDS treatment with currently available protease inhibitors, DOT has been demonstrated to add years of life for people with both TB and AIDS.
- ◆ **Protects the Workforce.** Nearly 80% of TB patients are in their most economically productive years of life. These youthful patients represent a workforce nearly as large as the number of people employed by the world's 20 largest international corporations.
- ◆ **Protects International Travelers.** DOT safeguards the world's annual 500 million international travelers by reducing the global number of infectious TB cases.
- ◆ **Stimulates Economies.** DOT offers relatively quick payoffs for the economies of developing countries. Studies in India and Thailand have shown that a small investment in DOT can save billions of US dollars annually.
- ◆ **Is Proven To Be Effective.** DOT has been implemented successfully in a wide variety of conditions in locations including Tanzania, Guinea, China, Bangladesh, New York, and Peru. Currently, nearly 70 countries are using DOT and achieving good results.

Summarized from articles by Kraig Klautt and Arata Kochi in *The TB Treatment Observer*, No. 2, published by the WHO Global Tuberculosis Programme (GTB) in Geneva. Arata Kochi is the director of GTB.



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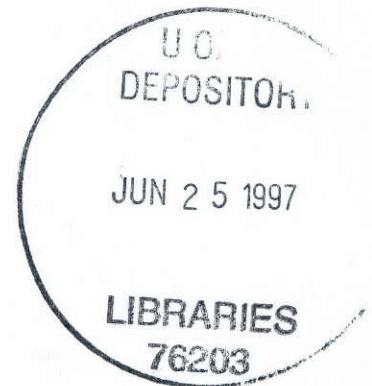
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Erratum

In the February 17, 1997, issue of DPN (Vol 57, No.4), we cited the wrong year in reference to the DPN article on tuberculosis transmission via brushtail possums. The date of the issue containing that information is 11/14/94 (Vol. 54, No. 23).