

Infectious Disease

The CSTE fellow will serve as Quarantine Station (QS) lead for operational research. The CDC QS Medical Officer, primary mentor, and the Texas Department of State Health Services (DSHS) Public Health Preparedness Director and CDC QS Quarantine Public Health Officer, secondary mentors, will provide technical support, guidance, and staffing oversight. Fellow may work with the El Paso PH tuberculosis (TB) and sexually transmitted disease clinics and epidemiology outbreak and surveillance response team. Fellow's multiagency involvement with state and city Public Health (PH) Departments will be facilitated by membership in an epidemiology research and surveillance consortium that also includes the Pan American Health Organization, the Juarez PH Jurisdiction and the U.S. Mexico Border Health Commission.

Daily fellowship QS activities will also include routine QS officer duties such as illness and cargo response at ports of entry (POE'S) and participation in PH preparedness activities. Fellow will also participate in the Border Infectious Disease Surveillance (BIDS) Project and the CDC Team that oversee medical evaluation and referral of migrants with PH conditions. Fellow may participate in state community and CDC Epi aid outbreak investigations. The Texas DSHS will offer fellow the opportunity to work among several passive, active, and syndromic surveillance programs that emphasize PH Preparedness and Border Health surveillance.

Possible Projects:

Epidemiologic Analysis of infectious Tuberculosis patients who experienced long haul international air travel: There are over 80 million yearly international air passengers arriving at U.S air ports, and infectious TB is the leading condition reported among arriving air passengers. Currently, the standard risk of travel of 8 or more hours duration is used as minimum criteria to determine significant transmission and trigger a contact investigation. The data to support the 8 hour trigger is limited. A prospective epidemiologic analysis will be made of post arrival international air passengers diagnosed with infectious TB who travelled for at least 8 hours and are reported to Texas PH. Data from the state genotyping projects will be used to search for possible clusters and epidemiologic links.

Analysis of Genetic and Environmental Risk Factors for Development of Active Tuberculosis Among Patients From a Cross-Border Binational TB Project: It is estimated that only 10% of TB infected individuals develop active disease during their lifetime. Given the significance of TB infection and its progression to active disease, it is assumed that predisposition to active TB is influenced by both genetic and environmental risk factors and their interactions. In this context we have established a multidisciplinary collaborative with the Southwest Foundation for Biomedical Research, and the Texas and Chihuahua Departments of Health to examine the genetic epidemiology of TB, including host-pathogen dynamics in a patient population from Binational TB project Juntos (together). A case control design will be used to compare individuals with active TB disease and with TB infection only. Using

standard clinical diagnostic criteria, important epidemiologic variables and genomic association will be used to examine genetic and environmental disease risk factor influence and interaction. This will be a 12-month start up pilot project to pave the way for a possible extended phase 2 project.

Use of Emergency Medical Services Dispatch Data for Illness Surveillance at El Paso International Ports of Entry: According to a computerized EMS database, there were 537 EMS patient responses at the international land POE's in El Paso Texas in 2006. Approximately 5% of these calls were for possible infectious disease conditions. The El Paso Fire Department and the CDC El Paso Quarantine Station have collaborated to implement FirstWatch, a web-base system that monitors and reports emergency call response data to the El Paso Quarantine Station in real time. This allows the QS to monitor and evaluate EMS dispatch data of 9-1-1 calls to international POE's without direct quarantine station staff involvement. The project will assess the feasibility of using real time EMS dispatch data as an early detection tool for infectious conditions of Public Health Significance entering the U.S. through El Paso International land ports. Fellow will review EMS dispatch and response logs and contact the hospital where ill traveler was transported to, in order to collection additional clinical data and final diagnoses. Fellow will be using descriptive analyses to determine the number of travelers fulfilling the syndromic surveillance definition of conditions of public health interest, and the proportion of these travelers fulfilling DGMQ's definition of conditions of public health interest. He or she will also be analyzing EMS data from FirstWatch to look at trends in reporting and implement a case control study to look at the clinical characteristics identified by EMS.

Tuberculosis in Recent Immigrants and Refugees who settled in Texas: Evaluation of CDC Immigrant Medical Examination and Notification Protocols: High rates of TB disease in persons born outside the US continue to be a significant public health problem. Immigrants are at increased risk of active disease even years after entering the US. However, recently CDC Division of Tuberculosis Elimination has observed a significant number of cases of TB in recent immigrants, including some with cavitation. This suggests that there may be people entering the US with TB conditions who are not receiving needed public health follow up. Our aim would be to determine the TB status of persons with 'early' TBD (within 1 yr of entry) at the time of entry into the US and to attempt to determine how many of these cases might have been detected or prevented with more effective follow up. We propose to examine the records of immigrants reported with TB disease since June 2006. For each case entering the US within 1 yr of the diagnosis of their disease, a search of electronic CDC files would be made to determine their TB status on entry. In addition, records would be used to determine the extent to which notification to the local health department and patient examination and follow-up was successful, and to examine some factors which might account for their development of active disease

Descriptive study of Congenital Syphilis Risk Factors Among High Risk Populations in Ciudad Juarez Mexico: The Chihuahua and Texas State Departments of Health have documented recent increases in

the number of cross-border congenital syphilis linked to vulnerable populations in Ciudad Juarez. For this reason both state health departments and the Pan American Health Organization are initiating a program to prevent congenital syphilis among these groups. This project focuses on characterizing disease burden and transmission risk factors in three high risk groups from Cd. Juarez. The main thrust of this project is to evaluate infection rates of syphilis and HIV thru testing, counseling, and follow-up. We also hope to assess risk factors and reproduction outcomes in one of these high risk groups (commercial sex workers) because they represent an important disease reservoir for male U.S. resident clients. Fellow would have an opportunity to participate in analysis and prevention design activities in collaboration with Binational PH .

Assignment Location: El Paso, TX

Primary Mentor: Miguel A. Escobedo, M.D., M.P.H.

Medical Officer

El Paso Quarantine Station

Advanced Degrees: M.D., Stanford University (1982)

MPH, University of California, Berkeley (1983)

Secondary Mentor: Arthur G. Alvarado, R.S., M.P.H.

Manager, Public Health Preparedness and Regulatory Programs

Texas Department of State Health Services

Advanced Degree: M.P.H., University of Texas Houston Health Science Center (2006)