Infectious Diseases

California Department of Public Health, Tuberculosis Control Branch
Richmond, California

Assignment Description

The California Department of Public Health (CDPH) Tuberculosis Control Branch (TBCB) collaborates with large urban jurisdictions as well as with rural and small health jurisdictions on diverse statewide activities to prevent and control tuberculosis. These activities include surveillance, research, program evaluation, program management and outbreak investigation. There are approximately 45 TBCB staff, including epidemiologists, clinical specialists, program liaisons, communicable disease investigators, and other professional and support staff.

The Fellow will be an active member of the Division of Communicable Disease Control and the surveillance and epidemiology team in the TBCB. The team is specifically responsible for managing surveillance, epidemiology, and the Multi-drug Resistant TB (MDR-TB) Consultation Service. The SE team members work closely with other TB Control Branch and Department of Public Health staff.

Day-to-Day Activities

The primary daily activity of the CSTE Fellow will be to participate in ongoing epidemiology activities of the TBCB. The Fellow will interact frequently with local health department personnel, including making visits to local health departments and directly participating in TB field investigations, outbreak investigations, program evaluation and/or implementation science projects. The Fellow will meet regularly with members of the SES team to plan and carry out epidemiologic analyses. One of the secondary activities for the Fellow will be to provide epidemiologic assistance to the TB Branch MDR-TB Consultation Service.

Outbreak field investigation: The CSTE Fellow will have an opportunity to participate in outbreak field investigations. Within the past several years, California has experienced TB outbreaks in a variety of populations and settings including: newly arrived immigrant populations, marginally housed persons, correctional populations, schools, immunocompromised persons, and extensive, complex contact investigations. The TBCB investigates many TB outbreaks each year including TB outbreaks among adults of foreign-born origin, homeless populations, schools and within institutions.

The CSTE Fellow has the option to be trained in TB outbreak response. She/he can be part of a team that plans the outbreak response, providing epidemiologic and analytic support to local health departments, interacting with other involved health jurisdictions, and coordinating the outbreak response. In addition, the fellow will be responsible for MDR TB analytics, tasks and analysis of genotyping data, as well as the core surveillance epidemiology activities.

Note: Other important activities are described in detail in the next section under Potential Projects.
Potential Projects

Surveillance Activity

Surveillance of Multi-Drug Resistant Tuberculosis

Several projects on MDR-TB are available.

a. Pilot and evaluate a new MDR-TB surveillance form and data elements to inform utility for the national MDR-TB surveillance system.
b. Descriptive analysis or case series on individuals who received high dose moxifloxacin dosing. Did they experience more side effects? What type of medication levels were they able to achieve?

Surveillance Evaluation

Evaluation of Genotyping Data

Since 2004, the CDC has conducted universal TB genotyping for all culture positive TB specimens. The genotyping allows programs to identify transmission between individuals and distinguish between infection acquired in the past compared to recently or newly acquired infection. Evaluate CDC TB-GIMS system which is used to report genotyping data to help identify clusters and TB outbreak.

Major Project Examination of TB and HIV

Several projects are available examining TB and HIV data.

a. Determine if HIV-positive individuals in California, a group with a high likelihood of progression to active TB disease, are successfully initiating and completing prevention therapy (latent tuberculosis treatment).
b. Determine rate of progression to active TB among HIV+ persons by HIV treatment status/CD4 count using AIDS office data

Additional Project TB Screening Program in Universities

The University of California system has implemented a TB screening program for students from countries with high TB burden. This project would be to determine if college students from countries with high TB burden are being screened and if infected, completing treatment when they enter the US. Data collection and analysis may include colleges and beyond the University of California system.
Additional Impact of Smoking Cessation Interventions Project

Investigate the impact of smoking cessation interventions applied in TB clinic settings to determine if integrating smoking cessation into TB clinical practice is feasible, acceptable and successful.

Preparedness Role

The Fellow will work actively in collaboration with the Branch epidemiologist responsible for the TB control portion of the State Emergency Preparedness Plan. Activities may include helping to determine how to incorporate lessons learned from TB outbreak investigations into bioterrorism and emerging pathogen response protocols, and how to plan for continuity of government operations (keeping state and local TB programs running in an emergency). Local health departments regularly use TB outbreak investigations as an opportunity to test local emergency response systems. The CSTE Fellow will have opportunities to assist with these tests.

Additional Activities

1. Since 2004, the CDC has conducted universal TB genotyping for all culture positive TB specimens. The genotyping allows programs to identify transmission between individuals and distinguish between infection acquired in the past compared to recently or newly acquired infection. Several possible projects involving genotyping data include: examining factors associated with transmission and intervention trials to stop transmission, a determination of strain types associated with multi-drug resistant TB, and examining which strains are most likely to propagate in California.
2. Examine trends in TB patient complexity over time in California, including trends in drug-resistant TB in California. Complexity includes clinical and socio-behavioral risk factors
3. Investigate the impact of smoking cessation interventions applied in TB clinic settings to determine if integrating smoking cessation into TB clinical practice is feasible, acceptable and successful.
4. Determine treatment outcomes of binational patients in California using the newly proposed binational case surveillance definition
5. Since 2010, the TBCB has implemented several changes to its TB surveillance system, including use of web-based reporting and a revised TB reporting form. The Fellow will have opportunities to evaluate aspects of these major surveillance system changes.
6. Participation in a wide variety of evaluations that are routinely carried out by the TBCB or within the Division of Communicable Disease Control. These include indicators of local TB control performance, national systems to evaluate new immigrants for TB, laboratory reporting practices, and cost-effectiveness analyses.
Mentors

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