

Infectious Disease

The Office of Infectious Disease Services (OIDS) in the Arizona Department of Health Services is responsible for monitoring, preventing and controlling diseases caused by infectious agents (other than HIV/AIDS), and toxins. It contains five programs; Infectious Disease Epidemiology, Tuberculosis Control, Hepatitis C Surveillance and Prevention, Sexually Transmitted Disease Control and Vector-Borne and Zoonotic Diseases (see the organizational chart). The approximately 45 staff members with diverse backgrounds provide epidemiologic, medical, entomological and veterinary public health consultation both within the Bureau of Epidemiology and Disease Control Services and to other state and local agencies, health care providers and the general public. Each program also collects, maintains, and analyzes human and animal reportable disease data, as well as vector surveillance data to monitor trends, detect outbreaks, and evaluate the impact of infectious diseases of public health importance in Arizona.

The Infectious Disease Epidemiology Program is responsible for monitoring and controlling infectious diseases in general, including vaccine-preventable such as measles, rubella, pertussis and hepatitis B; food and waterborne diseases (salmonellosis, listeriosis, cholera); diseases caused by fungi (Valley Fever); diseases caused by bacteria-related toxins (botulism, food poisoning); and other emerging infectious diseases.

The Program:

- Maintains a registry of notifiable communicable diseases;
- Provides data and statistics on selected reportable infectious diseases by monitoring disease trends through surveillance and epidemiologic investigations;
- Provides technical assistance to local and tribal health departments regarding prevention and control of disease caused by infectious agents and microbial toxins;
- Coordinates outbreak investigations involving multiple counties in Arizona;
- Provides public health information to the public and health care providers in Arizona;
- Serves as a liaison between local public health entities and the Arizona State Laboratory;
- Promulgates rules for communicable diseases as needed;
- Facilitates release of botulism and diphtheria antitoxins from the Centers for Disease Control and Prevention for suspected cases; and
- Serves as the liaison with the appropriate branches of the Centers for Disease Control and Prevention on communicable diseases.

On a day-to-day basis, the CSTE fellow will perform routine surveillance activities including: review of lab and physician reports of acute hepatitis, coccidioidomycosis, and/or other communicable diseases to ensure data completeness; perform data quality audits; analyze data to determine trends; and develop a protocol to identify risk factors for infection. In addition, the fellow will be asked to identify enhancements to surveillance activities such as creating additional investigation forms and educational activities targeted at groups identified as high risk. The fellow will also be asked to assist with infectious disease outbreak investigations and eventually lead one or several investigations, depending on the interest in such activities. There will also be opportunities to work with expert epidemiologist, Craig Levy in the Vector-Borne and Zoonotic Diseases Program on investigations of Rocky Mountain Spotted Fever, Plague and Tularemia – all endemic diseases in Arizona.

Potential Projects

Arizona_Sunenshine

Over the past five years in Arizona, reports of acute hepatitis B have increased 128%, and reported coccidioidomycosis rates have more than doubled. The cause for these increases is unknown and little is known about demographic and/or risk factors for these diseases in Arizona. Due to this gap in public health knowledge, the proposed primary projects for the CSTE fellow include:

- Development of an enhanced surveillance system for hepatitis B or coccidioidomycosis, possibly including a mail-out form to improve collection of demographic, testing, and risk factor data.
- Design and implementation of a case-control or case series investigation to evaluate risk factors for hepatitis B infection or coccidioidomycosis in Maricopa County (largest county in Arizona – includes Phoenix), with subsequent analysis, presentation of the data and development of public health interventions based on the data.
- Participation in the interdisciplinary Hepatitis B Strategic Plan to develop educational and adult immunization campaigns targeted toward high risk populations.
- Participation in the multi-disciplinary team working on decreasing coccidioidomycosis in Arizona including enhanced surveillance, drug therapy trials, and vaccine development. This team includes coccidioidomycosis expert, John Galgiani, MD.
- Surveillance system evaluation component: Evaluation of the enhanced hepatitis B or coccidioidomycosis surveillance system in comparison to the existing systems of predominantly laboratory-based reporting.

ADHS utilizes the incident command structure during public health emergencies including widespread infectious disease outbreaks. The fellow would be asked to participate in the epidemiology roles under Public Health Emergency Operations if such a situation arises.

Assignment Location: **Phoenix, AZ**

Primary Mentor: Rebecca Sunenshine, MD
Deputy State Epidemiologist for Arizona

Advanced Degree: MD, Indiana University (1998)

Secondary Mentor: David Bronson-Lowe, Ph.D
Vaccine Preventable Disease Epidemiologist
Arizona Department of Health Services

Advanced Degrees: PhD, University of Arizona (2006)
MS, University of Arizona (2000)