

Infectious Disease

Assignment Description

The Southern Nevada Health District was created by the Nevada legislature to provide public health services to the Las Vegas, Clark County, and the surrounding areas. The district has public health powers and works closely with the Nevada State Health Division. The District serves a population of about 2.2 million residents, including the fifth largest public school district in the US that has 315,000 students. The SNHD operates a full service public health agency with responsibility for infectious disease, chronic disease, injury prevention, and maternal and child health. The District is responsible for disease reporting, surveillance, outbreak investigation, and program monitoring and evaluation. The existing epidemiology program has a total staff of 15 that includes experienced PhD and MPH-level epidemiologists, a MS-biostatistician, and several disease investigators.

There exists a unique opportunity to participate in developing a new, robust, open source electronic disease reporting software system that will support surveillance and epidemiologic analysis for all reportable diseases and to develop analyses and interpretations from the database. We have successfully deployed the new software database (TriSano) and backloaded 10 years of historical Southern Nevada Health District data. We will be systematically analyzing the data on all of the reportable diseases. We will be fully developing the components to support epidemiology, surveillance, and case management for TB, STDs, and HIV. These activities will result in producing new systems that will replace software that was previously developed by CDC such as the Tuberculosis Information Management System (TIMS), and the Sexually Transmitted Disease Management Information System (STD-MIS).

We have also developed and deployed an effective software solution to enable electronic laboratory reporting (ELR) from LabCorps and Quest Laboratories, and we will next be bringing the 13 private hospitals that serve the 2.3 million residents on line with ELR. Dr Middaugh directs the epidemiology program and the Southern Nevada Public Health Laboratory, so we enjoy seamless integration between epidemiology and public health laboratory system. The SNHD has also recently hired an expert in public health informatics who will provide advanced, sophisticated informatics support to this effort. We envision no barriers to implementing the new surveillance system and further developing the existing surveillance infrastructure.

Day-to- Day Activities

The fellow will participate fully as a member of our epidemiology office, having access to several highly skilled and experienced epidemiologists who will be collaborators and colleagues. Day-to-day work will include analysis of existing databases, responding to reports of infectious diseases and if outbreaks occur, playing a lead role (with appropriate mentoring and supervision) in investigating them. There will be opportunities to present results of investigations and analyses to professional organizations and to participate in in-house seminars.

Potential Projects

The fellow will have an opportunity to become involved in many projects, depending on interest and enthusiasm, under the guidance of Dr Middaugh:

- Analyzing existing surveillance data on reportable diseases and participating in our epidemiology and surveillance team to develop the capacity of the new TriSano software to interpret surveillance data for diseases that are reportable.
- Analyzing data from our immunization registry to identify subpopulations that are underserved so that we can target future outreach to improve vaccination levels in the District
- Analyzing data from our tuberculosis and STD programs to identify risk factors and subpopulations so that we can target future outreach for case management and effective prevention efforts.
- Developing new, innovative strategies to apply information technology for disease control; for example, explore the use of cell phones and Skype for case management of tuberculosis
- Analyzing daily school absenteeism from the Clark County School District, comprising 315,000 students from 350 schools using an existing computerized absenteeism database, and studying the relationship of influenza illness to school absenteeism.
- Providing analyses of infectious disease morbidity data and writing technical summaries of disease trends and disparities.
- Analyzing existing data on TB, STD, HIV, and immunization to enable program evaluation, identify subpopulations to target outreach interventions, and design innovative intervention strategies.
- Investigating disease outbreaks
- Conducting health assessments of the population using existing databases
- Expanding viral respiratory surveillance through recruitment of physicians to obtain and submit diagnostic specimens to our public health laboratory.
- Providing epidemiology expert consultation to existing epidemiology staff.
- Presenting to the medical community and general public.
- Developing expertise in research involving human subjects, institutional review board (IRB) requirements including supporting IRB training and certification, and the differences between public health practice and research.
- Preparation and submission of manuscripts to peer-review scientific journals for publication, and present results of studies and disease investigations at professional meetings.

Preparedness Role

The Office of Public Health Preparedness is also supervised by Dr Middaugh, and the fellow will be supported to complete ICS training and to become involved in designing and participating in preparedness exercises.

Assignment Location:

Las Vegas, Nevada

Primary Mentor:

John Middaugh, MD

Director, Division of Community Health

Southern Nevada Health District

Secondary Mentor:

Lawrence Sands, DO, MPH
Chief Health Officer

Southern Nevada Health District