Assignment Description

The goals of the Applied Epidemiology Fellowship are to provide broad technical training in public health practice; in the Office of Communicable Disease Epidemiology (CDE), this will include active involvement in communicable disease investigations, outbreak response, public health preparedness, and daily public health practice in Washington State. The fellow will be quickly integrated into the day to day work of the office, and supported in promptly considering and embarking on initial projects in order to submit an abstract for the CSTE Annual Conference in June 2018.

The Office of Communicable Disease Epidemiology is responsible for the prevention, surveillance, and control of notifiable conditions in Washington State including vaccine preventable diseases, influenza, foodborne/enteric diseases, zoonotic and vectorborne diseases, healthcare associated infections, and emerging diseases of public health concern. The refugee health program and syndromic surveillance program are also housed within this office. The work of CDE therefore provides a wide range of experiences and a dynamic and challenging work environment that allows the fellow multiple opportunities for career growth in a mentored setting. CDE staff maintain relationships with local, state, and federal agencies and are able to foster connections with multiple partners.

Past surveillance and evaluation projects completed by recent fellows include:

- Development of Hepatitis C epidemiologic profile for Washington State using surveillance data and death records (poster presentation at CSTE conference)
- Establishing an ongoing system for enhancing ascertainment of deaths due to notifiable conditions using the Washington State Electronic Death Records System (published in Public Health Management and Practice)
- Evaluation of utility of the PHIMS electronic database for pertussis and salmonellosis surveillance in Washington State (poster presentation at CSTE conference)
- Evaluation of Washington State’s Immunization Information System for utility in estimating immunization coverage levels and comparison with National Immunization Survey results.

Examples of data analysis projects completed by recent fellows include:

- Assessment of HPV vaccination coverage in all Washington Counties using immunization registry data a surveying providers regarding HPV recommendation practices and perceived barriers to vaccinating all adolescents (published in Public Health Reports)
- Trends in rotavirus vaccine coverage and maternal risk factors associated with partial and no vaccine coverage in Washington State during 2007-2010 (poster presentation at CSTE Conference)
- Shiga toxin-producing Escherichia coli: Incidence trends and laboratory testing practices in Washington State, 2005-2010 (published in Emerging Infectious Diseases)

The CSTE fellow would additionally be expected to take a role in emergency response training, exercises, and actual events based on the State Emergency Preparedness plan. Attendance at local
conferences and trainings is encouraged. Although budgets are restricted, travel to regional
conferences has been arranged for previous fellows. The Office of Communicable Disease
Epidemiology is committed to supporting its trainees within financial constraints faced by all state
health departments.

**Day-to-Day Activities**

Day-to-day activities for the CSTE Fellow include attending daily office meetings to discuss current
case and outbreak investigations, reviewing reported notifiable condition cases, consulting with local
health jurisdictions, learning and maintaining updated guidance for notifiable condition investigation
and control, and surveillance and major project activities. The fellow will be supported by subject
matter experts and will be encouraged to utilize access to SAS, Stata, R, LinkPlus, Epinfo, and a variety
of statewide databases for surveillance and analysis projects. Large multi-jurisdiction outbreaks are
not uncommon in Washington, and the fellow will be encouraged to lead or participate in
investigation and response.
The fellow will receive the same orientation and training as all new DOH employees. They will be
supported in reviewing potential projects including frequent meetings with both mentors as needed.
The fellow will assume responsibility for reviewing and classifying electronically reported notifiable
conditions cases in order to gain familiarity with disease surveillance and control. After training, the
fellow will take calls from local health jurisdictions and provide consultation on the management of
reported cases. CDE is co-located with the Washington State Public Health Laboratory and CDE staff
have many opportunities to interact with the microbiology, molecular, virology, and enterics labs.
Collaboration with the Public Health Laboratories is possible depending on the interests of the fellow.

**Potential Projects**

**Surveillance Activity**

Development of a culture independent diagnostic testing (CIDT) tracking database

Develop a culture independent diagnostic testing (CIDT) tracking database and a generate a
description of cost burden and lost cases. Many of the labs in Washington State are ceasing
traditional culture methods and moving toward culture independent methods; we need a system for
labs to potentially send us raw specimens (not isolates) and a process to obtain useful public health
data from these specimens.

**Surveillance Evaluation**

Evaluation of the current surveillance system for coccidioidomycosis (Valley Fever) in Washington State

Evaluate the current surveillance system for coccidioidomycosis (Valley Fever) in Washington State
using data collected from commercial laboratories to assess completeness and timeliness of
laboratory reporting. Assess differences in patterns of test ordering by geographic location, disease
reporting requirements, and provider type. Identify gaps in laboratory reporting, missed cases, and
areas for system improvement.
**Major Project**

**Develop a sentinel hospital system to determine the burden of Legionella infection in Washington**

In order to better understand the burden of Legionella infection in Washington, as well as to aid in development of educational materials regarding appropriate testing for Legionnaires’ Disease, work with subject matter experts at the Washington State Department of Health as well as partner agencies to develop a sentinel hospital system for Legionella. This system will involve recruiting hospitals to participate, facilitating specimen shipment and collection of clinical information for patients who are part of the program, working to determine if IRB involvement is needed, assessing barriers to appropriate specimen collection, analyzing laboratory and clinical data, and presenting to stakeholders regarding lessons learned.

**Additional Project**

**Refugee Health Program: Survey of Civil Surgeons**

In the United States, immigration medical exams must be conducted by a physician designated by the U.S. Citizenship and Immigration Services. These physicians are known as civil surgeons. Presently, we don’t know how many civil surgeons are practicing in Washington or what their needs or, or if there are areas of the state that are under-served. Using a mix of quantitative and qualitative methods, the fellow will conduct a survey of civil surgeons in Washington State. This project would be conducted in collaboration CDC Division of Global Migration and Quarantine Seattle Quarantine Station partners. The survey would be used to identify civil surgeons in WA, including location, practice and training needs. Information regarding how many immigrants applying for status adjustment, visa types, time since arrival in the US and health conditions identified (e.g., TB infection) would inform health needs for immigrants after arrival to the US.

**Additional Project**

**Assessment of antibiotic resistance trends in central line blood stream infections**

The Healthcare Associated Infections program maintains extensive data regarding infections, including central line-associated bloodstream infections, and does have data regarding antibiotic resistance patterns of infections reported. Project is to perform analysis of time trends regarding antibiotic resistant infections, and determine next steps for reducing the burden of antibiotic resistant infections.

**Preparedness Role**

The Office of Communicable Disease Epidemiology does contain an Emergency Preparedness section which works very closely with the Department of Health’s Emergency Preparedness and Response Unit. The Office does occasionally go into incident command for outbreaks and other large events, and the fellow will be trained on incident command procedures and will participate in outbreaks and other emergency events as the opportunity arises. Past fellows have deployed to both CDC and to other parts of Washington state to assist with large scale events, such as Ebola response and measles response.

The Office does extensive planning for emergencies, and the fellow will have ample opportunity to
plan and be part of table top exercises, update planning materials, and participate in actual incident command structure. As an example, the Office does work very closely with the Washington State Department of Agriculture on zoonotic disease, and the fellow will have the opportunity to plan, participate in, and update materials related to highly pathogenic avian influenza, among many other examples that will arise during the fellow’s tenure.

Additional Activities

The Office of Communicable Disease Epidemiology is a highly collaborative office, and there is no shortage of interesting and valuable work occurring on a daily basis. The fellow will be integrated into the daily case work of the office, as well as working through the list of competencies. The specifics of the fellow’s projects will be dictated by the fellow’s interests, with projects ranging from vaccine preventable disease to refugee health to informatics and preparedness. The fellow will have ample opportunity to travel across the state when working with local health jurisdictions and tribes, and specific work can be tailored to the fellow’s interests. The Office has had numerous fellows, and staff here are expert at having projects lined up and ready to go so that the fellow will be sure to meet the competencies in an efficient fashion, all while leaving room to explore personal career interests. The fellow will have opportunity to work with labs, plan a conference, and participate in a broad array of workgroups, per the fellow’s interests.

Mentors

Primary
Vivian Hawkins, MS, PhD
Epidemiologist

Secondary
Hanna Oltean, MPH
Epidemiologist