

Infectious Diseases

Assignment Description:

The Virginia Department of Health's Office of Epidemiology is responsible for a broad range of disease surveillance and control activities in Virginia. The Fellow would work mainly within the Office's Division of Surveillance and Investigation (DSI). Responsibilities of the division include investigating or providing consultation on communicable disease outbreaks; developing and implementing disease database and surveillance systems; developing guidelines for communicable disease management; and supporting statewide epidemiologic infrastructure and capacity by maintaining grants, regulations, and policies and by providing training.

The Fellow will become a member of the DSI team of epidemiologists. DSI is very focused on applied public health epidemiology, and much of the assignment will involve doing or supporting field epidemiology work through interacting with district health department epidemiologists. Some of the projects will be focused on surveillance, others will involve conducting investigations, and some projects will illustrate the complementary nature of surveillance and investigation activities. Most of the outbreaks needing investigation will be foodborne or healthcare-associated, the latter including respiratory or invasive infections or bloodborne pathogens. Opportunities also exist to work on zoonotic or vaccine-preventable illnesses and to participate in emergency preparedness exercises and activities.

Day-to-Day Activities:

The Fellow's day-to-day activities will involve active participation as a team member within the Division of Surveillance and Investigation (DSI). With support from VDH DSI staff, the Fellow will work on projects related to detecting, monitoring, and responding to communicable diseases of public health importance in Virginia. This may include collecting and analyzing epidemiologic data and reporting findings, working to improve surveillance systems or the use of existing systems, creating information for the public and healthcare providers and guidance for health departments, and giving presentations on public health topics. Outbreak investigations involve collecting information and designing and implementing an analytic approach to identify the source of the outbreak and developing recommendations to prevent further spread of disease. The Fellow will participate in weekly division staff meetings, where current outbreaks, investigations, and special projects are discussed, as well as monthly statewide epidemiology conference calls and semi-annual communicable disease training events.

Potential Projects:

The Fellow will have substantial input in determining the projects that are pursued. Activities will include work on analytic projects, outbreak investigations, and planning and policy related activities. The Fellow will select one or more long-term projects to work on during the fellowship. Examples that may be considered include: conducting a descriptive analysis of invasive group A *Streptococcus* infection data, reviewing multiple years of Virginia data and assessing factors such as age, fatality status, clinical manifestation and seasonality; assessing the impact of electronic laboratory reporting on completeness and timeliness of surveillance data; and evaluating enteric disease clusters identified by the state laboratory through genetic testing. In addition, DSI participates in many statewide and national outbreak investigations each year. Through participation in the outbreaks, the Fellow would gain experience in all aspects of outbreak investigations, including formulating hypotheses, designing and administering questionnaires, entering and analyzing data, and generating reports. If the Fellow has an interest in healthcare-associated infections, there is also an opportunity for involvement in various

aspects of the HAI program, including data analysis, educational initiatives, outreach with advisory groups, and program development.

The Fellow will also work on program and surveillance system evaluations. One option would be to evaluate campylobacteriosis data reported from physicians and laboratories across Virginia to assess whether recent changes in the CDC/CSTE surveillance case definition have affected surveillance for this disease and to evaluate the campylobacteriosis surveillance system according to CDC criteria of timeliness, usefulness, etc. Information learned from the evaluation will be used to frame changes in case investigation guidance for local health districts. VDH is interested in pilot testing an electronic food history form, and the Fellow could have an active role in assessing its success. Another option would be to evaluate the current system for school absenteeism surveillance. Absenteeism data reported from public schools are imported and evaluated in ESSENCE, Virginia's current data analysis software for syndromic surveillance. The evaluation would focus on reviewing the usefulness, timeliness, and specificity of the data in the surveillance system.

Opportunities will also exist for the Fellow to work on projects with other divisions within the Office of Epidemiology. Within the Division of Environmental Epidemiology (DEE) there are opportunities to work with staff on the surveillance and investigation of zoonotic diseases, including rabies and vector-borne diseases (e.g., West Nile virus). In addition, there are opportunities to work with the Division of Immunization on vaccine-preventable diseases, such as pertussis, measles, and varicella. Such opportunities will provide the Fellow with extensive practical experience and skills, a good understanding of the roles and responsibilities of state and local health departments, and access to significant projects related to the Fellow's interests and career goals.

Overall, it is expected that the Fellow will acquire a range of practical public health skills and experiences useful in a wide variety of career paths. These activities may also lead to presentations, conference abstracts, and/or peer-reviewed publications. We expect that the Fellow will have the time and autonomy to develop projects of interest, while participation in the Office of Epidemiology's many activities will provide opportunities to acquire a broad range of skills and experiences.

Preparedness Role:

The Office of Epidemiology plays a prominent role in emergency preparedness and response activities. Staff work closely with the VDH Office of Emergency Preparedness to conduct a wide range of activities, which the Fellow will have an opportunity to participate in, including: emergency preparedness exercises and drills, developing emergency response plans, creating educational resources and materials (e.g., fact sheets and provider guidance) for biological, chemical and radiological emergencies, and responding to public health emergencies. For example, the Fellow may work to bolster state and district plans for public health response to chemical emergencies. The Fellow would also likely have a role in collecting and compiling the data necessary to track district, regional, and statewide status on the Public Health Emergency Preparedness performance measures for epidemiology.

Assignment Location: Richmond, VA

Primary Mentor: Diane Wollard, PhD, MPH
Director, Division of Surveillance and Investigation
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Secondary Mentor: Angela Myrick-West, MPH

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