

Program Area:

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 communicable disease outbreaks, developing and implementing disease database and surveillance systems, developing guidelines for communicable disease management, and assisting in the development of public health law, regulations, and policy. Additional activities include interacting with stakeholders (e.g., public, healthcare providers, local health departments, government) to promote health education and disease prevention through presentations, the media, and reports. DSI personnel have a broad range of expertise in public health, and include a PhD/MPH, a physician epidemiologist, a nurse epidemiologist, and several MPH/MS to collaborate with on projects.

Opportunities will also exist for the CSTE Fellow to work on projects with other divisions within the Office. Within the Division of Environmental Epidemiology (DEE) there are opportunities to work with the State Public Health Veterinarian and the State Public Health Entomologist on surveillance and investigation of zoonotic diseases, including rabies and vector-borne diseases (e.g., West Nile Virus, Lyme disease). In addition, there are opportunities to work with the Division of Immunization on the surveillance and investigation of vaccine-preventable diseases, and with the Emergency Preparedness and Response (EP&R) program within the Office of the State Health Commissioner on issues such as bioterrorism and pandemic influenza preparedness. 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.

Activities:

To provide the best understanding of the field of public health, the Fellow's day-to-day activities will involve active participation as a team-member within the Office of Epidemiology. With support from VDH staff, the Fellow will work on projects related to detecting, monitoring, and acting on communicable diseases of public health significance in Virginia. This may include collecting and analyzing epidemiologic data and reporting findings, working to improve syndromic surveillance systems, creating public and healthcare provider information, and giving presentations on public health topics to professional audiences,. The Fellow will also participate in unplanned activities, such as epidemiologic consultations (e.g., to the public or healthcare providers), outbreak investigations (e.g., foodborne) and responses to public health emergencies (e.g., hurricanes, bioterrorism) as situations arise. These efforts may lead to presentations, posters, reports, or peer-reviewed publications. In addition, the Fellow will participate in planned activities, such as weekly division staff meetings, semi-annual public health training, and a monthly journal club.

Opportunities for attending additional training, such as presentations through Virginia Commonwealth University's medical school or through Centers for Disease Control and Prevention video conferences occur frequently. Therefore, while the Fellow will have the time and autonomy to initiate and develop projects of interest, participation in the Office of Epidemiology's many activities will provide opportunities to acquire a broad range of skills and experiences.

Potential Epidemiology Projects:

Depending on interest and experience, the Fellow will select one or more long-term projects to work on during their fellowship. Examples that may be considered include evaluating enteric disease clusters detected through PulseNet or the impact of recent vaccination recommendations on pertussis (whooping cough) or varicella (chickenpox) in Virginia. Other potential projects include developing

approaches to the use of community containment for reducing the impact of pandemic influenza. In addition, DSI participates in a wide variety of state and national outbreak investigations (e.g., influenza, norovirus, salmonellosis, etc.) each year. As a result, 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. It is expected that these activities may lead to presentations, conference abstracts, and/or publications.

Other activities would include assisting DEE with identifying Lyme disease cases and other arthropod-borne illnesses (e.g., Rocky Mountain spotted fever, dengue fever, West Nile virus). The Fellow would communicate with laboratories and healthcare providers to obtain clinical information on potential cases and determine if patients meet clinical case definitions. There will be opportunities to produce reports and publications related to emerging diseases, and to potentially develop grants for improving disease detection and reporting.

Program or Surveillance System Evaluation

As a result of the DSI program's leading role in the implementation of automated syndromic surveillance systems such as ESSENCE and BioSense, the Fellow will have the ability to perform program and surveillance system evaluations. This would involve evaluating these enhanced surveillance methods as supplements to traditional detection systems to identify real events, evaluating the quality, value, and timeliness of alternative data sources (e.g., HMO ambulatory care, poison control center data, school absenteeism, and pharmacy sales), and developing guidance on the appropriate public health response and recommendations to improve the systems. Other options include assisting in the evaluation of the Commonwealth's influenza surveillance program to improve event detection, developing and implementing a hospital-associated infection (HAI) database, and/or implementing and evaluating an Outbreak Management System (OMS).

State Emergency Preparedness

The Fellow may work in several areas related to Virginia's public health emergency preparedness. This would include building disease surveillance infrastructure related to syndromic surveillance (e.g., developing training, expanding the surveillance systems to new sites, and developing methods to evaluate and respond to alerts). In addition, the Fellow will work with committee members on resource development (e.g., facts sheets and provider guidance) for biologic, chemical, and radiological emergencies through the EP&R program. Finally, the Fellow could participate in disaster preparation (e.g., pandemic influenza training, developing community containment measures such as isolation and quarantine), and in the response to disasters.

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.

Assignment Location:	Richmond, VA
Primary Mentor:	Christopher Novak, MD, MPH Medical Epidemiologist, VDH (2003-present)
Advanced Degrees:	MPH, School of Public Health, Loma Linda University (1999) MD, School of Medicine, University of Manitoba (1996)
Secondary Mentor:	David N. Gaines, BS, MS, PhD State Public Health Entomologist, VDH (2000-Present)
Advanced Degrees:	BS (Entomology), Penn State University (1981) MS (Entomology), Virginia Tech (1992) PhD (Entomology), Virginia Tech (1997)