

Infectious Disease

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 will work mainly within the Office's Division of Surveillance and Investigation (DSI). Responsibilities of the division include: interactions with stakeholders (e.g., public, healthcare providers, local health departments, government) for health education and disease prevention through presentations, the media, the monthly Virginia Epidemiology Bulletin and reports (e.g., the annual summary of Reportable Disease Surveillance in Virginia). The division's responsibilities also include developing guidelines for communicable disease management, developing and implementing disease database and surveillance systems, investigating communicable disease outbreaks, and assisting in the development of public health policy. 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 to work on projects with other divisions within the Office, including the Division of Zoonotic and Environmental Epidemiology (DZEE) and the Division of Immunization. This could provide experience with conditions such as: rabies and vector-borne diseases (e.g., West Nile Virus, Lyme disease), as well as vaccine-preventable diseases. Finally, projects may require working with the Emergency Preparedness and Response (EP&R) program within the Office of the State Health Commissioner. This will provide the Fellow with extensive experience and skills, a good understanding of the various responsibilities and activities of state and local health departments, and access to interesting 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: creating public and healthcare provider information, collecting and analyzing epidemiologic data and reporting findings, working to improve syndromic surveillance systems, 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, healthcare providers, and local health departments), outbreak investigations (e.g., foodborne, vaccine preventable, etc.) and responses to public health emergencies (e.g., floods, hurricanes, bioterrorism) as opportunities arise. These efforts may lead to work on presentations, posters, reports, or peer-reviewed publications. In addition, the Fellow will participate in planned activities, such as: weekly divisional 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 also 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 his or her area(s) of interest and experience, the Fellow will select one or more long-term projects (1 to 2 years) to work on during the Fellowship. Examples that may be considered

include: conducting a descriptive study (including GIS analysis) of shigellosis trends in Virginia, evaluating enteric disease clusters detected through PulseNet, developing and implementing a hospital-associated infection database, implementing and evaluating the Virginia Outbreak Management System (OMS), and investigating the impact of recent vaccination recommendations on pertussis (whooping cough) or varicella (chickenpox) outbreaks in Virginia. Other potential projects include developing approaches to the management of varicella outbreaks in schools or 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, MRSA, etc.) each year. As a result, the Fellow will 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.

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 work on several program and surveillance system evaluations. This will involve evaluating these enhanced surveillance methods to supplement 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, pharmacy sales, etc), and developing guidance on the appropriate public health response and recommendations to improve the surveillance systems. Another option will include assisting in the evaluation of the Commonwealth's influenza surveillance program to improve the data available for event detection.

State Emergency Preparedness

The Fellow will work in several areas related to Virginia's public health emergency preparedness. This will include: building disease surveillance infrastructure related to syndromic surveillance (e.g., developing training, expanding the surveillance systems to new sites across Virginia, 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 will participate in disaster preparation (e.g., pandemic influenza training, developing community containment measures such as isolation and quarantine), and in the response to disasters in Virginia (including hurricanes, floods, etc) as available.

Overall, it is expected that the Fellow will acquire a range of practical public health skills and experiences useful in wide variety of career paths.

Assignment Location:	Richmond, VA
Primary Mentor:	Christopher Novak, MD, MPH Medical Epidemiologist (09/03-present)
Advanced Degree:	MPH, School of Public Health, Loma Linda University (1999) MD, School of Medicine, University of Manitoba (1996)
Secondary Mentor:	Lesliann Helmus, MS Surveillance Chief, Virginia Department of Health (2003-Present)
Advanced Degrees:	MS, Ohio State University (1991)