Host site: Pennsylvania Department of Health Bureau of Epidemiology

Assignment Location: Harrisburg, PA

Primary Mentor: Sameh Boktor MD. MPH

Secondary Mentor: Jonah Long, MPH

Agency Description:
The Commonwealth is the 5th most populous state in the country, with 12.8 million residents. Pennsylvania has 67 counties, 6 of which have a county health department. There are also 4 municipal health departments, and the remainder of the state is managed directly by the state health department. The Pennsylvania Department of Health has approximately 1,400 employees, not including COVID-funded contractors. The Bureau of Epidemiology houses the Division of Infectious Disease Epidemiology (IDE), as well as community and environmental divisions. Currently, IDE has forty-one employees statewide who together conduct surveillance and epidemiological investigations and provide expert epidemiologic and infectious disease consultation and guidance to the Department, to the healthcare community, and to the public. IDE staff include Public Health Physicians, Epidemiologists, Epidemiology Research Assistants, Epidemiology Program Specialists, and administrative support staff. The Secretary of Health’s three main priorities for 2022 include promoting equitable health outcomes across the Commonwealth, ensuring that grant monies are spent making Pennsylvanians healthier, and investing in the Department’s workforce to enhance Pennsylvania’s public health infrastructure now and into the future. Key missions are monitoring and mitigating COVID-19, data modernization, combatting the opioid epidemic, and reducing Lyme disease. The Bureau of Epidemiology (BOE) is working to improve data systems, promote data-driven public health decision making, and enhancing information provided to partners and the general public.

Assignment Description:
This position will be located in the Pennsylvania Department of Health, Bureau of Epidemiology’s Division of Infectious Disease and within the influenza prevention program. The program is responsible for a broad range of surveillance and control activities in Pennsylvania for of course influenza, but also for COVID-19 and non-influenza, non-COVID-19 respiratory virus infections. The Fellow will also work with the Bureau of Epidemiology’s Infectious Disease Epidemiology (IDE) Investigation and Surveillance Sections as needed. The Fellow will participate in the day-to-day activities and issues including review of data processes for anomalies, preparation of routine and ad-hoc reports, and attending meetings with colleagues and stakeholders. The Fellow will have access to the data needed to implement the fellowship activities.

Preferred Background & Skills:
Good knowledge of SAS and/or R is required for the Fellow to be able to achieve the goals of the fellowship. Familiarity with the epidemiology of influenza and respiratory virus infections and some awareness of syndromic surveillance, LIMS, ELR and HL7 messaging is a plus. However, the Fellow will receive training on these systems and the concepts behind them.

What can the fellow expect to gain from 2 years at this host site?

The Fellow will gain an understanding of standard code sets such as LOINC and SNOMED, the basics of HL7 messaging (including ELR and eCR messaging), syndromic and respiratory virus surveillance systems, and the types of data typically available at state health departments. The Fellow will become more proficient in using analytic packages such as SAS or R and learn how to analyze and present data in a way that is meaningful to audiences with different levels of technical skills and background. The Fellow will work and interact with IDE staff and other stakeholders and will establish a robust network of public health colleagues. Troubleshooting and dealing with data and informatics challenges are skills that fellow will learn from day-to-day involvement in discussions and through hands-on experience.

Potential Projects include:

Host sites have listed up to 5 projects

Project 1: Develop Influenza and other respiratory virus surveillance dashboard for use on the public Commonwealth influenza surveillance webpage.

The project aims to develop an informative, interactive dashboard that will include the components of the current weekly influenza surveillance report, including trends in cases, deaths, strain typing done at BOL, and trends in syndromic respiratory emergency department visits, as well as additional features such as drill-down reports and analyses of data sources such as the National Respiratory Enteric Virus Surveillance System (NREVSS). The deliverables of this project include developing a public facing dashboard that uses multiple sources of data such as PA-NEDSS, PA-LIMS, and HMS's syndromic surveillance, and developing an internal dashboard for use by PADOH staff that has additional information such as a cluster detection module to identify influenza outbreaks efficiently and inform DOH staff of locations where influenza activity is high.

The public dashboard will improve data sharing with the general public and will make the data presented in an interactive way that will ultimately increase data usability and encourage collaboration with the PADOH. The internal dashboard will educate DOH staff about the community activity of influenza and other circulating respiratory viruses in a timely manner. It will also facilitate early detection of clusters, which will promote timely outbreak control efforts especially in high-risk settings such as Long-Term Care Facilities (LTCFs).

Project 2: Assess the Electronic Laboratory Reporting onboarding process and suggest possible actions to improve ease of onboarding while maintaining or improving data completeness.
The main objective is to improve ELR through enhancing completeness of data and shortening the onboarding process. Deliverables that will be expected from the project are an assessment of the current ELR onboarding process, development of ELR data quality assessment tools to measure completeness of variables of interest, and identification of process flow steps that could improve ELR onboarding and improve quality of data.

This project will improve the quality of lab data received by PADOH and strengthen the relationship with hospital and commercial laboratories. As most data coming into our reportable disease surveillance system is from ELR, improvements in the process will have major impact on the quality and timeliness of our reportable disease data.

**Additional information about the placement:**

The Fellow will be involved with other activities in the Bureau as opportunities arise that are deemed valuable for competency development or educational experience.