ID: 55902443
Infectious Diseases, Occupational Health - Host Site Description
Kansas Department of Health and Environment

Assignment Location: Topeka, US-KS
Kansas Department of Health and Environment
Infectious Disease and Emergency Response

Primary Mentor: Erica Thomasson, PhD, MPH
Career Epidemiology Field Officer
CDC and the Kansas Department of Health and Environment

Secondary Mentor: Justin Blanding, MPH
Senior Epidemiologist, Infectious Disease Epidemiology and Response Section Director
Kansas Department of Health and Environment

Work Environment
Hybrid

Assignment Description

The Fellow will be assigned to the Infectious Disease Epidemiology and Response (IDER) Section within the Bureau of Epidemiology and Public Health Informatics (BEPHI) located in the Curtis State Office Building, the newest building in the Capitol complex sitting catty-corner from the beautiful Kansas Statehouse in Topeka, Kansas.

IDER conducts infectious disease surveillance and outbreak investigations and provides subject matter expertise to local health departments, health care facilities, physicians, veterinarians, and the general public through the 24/7 KDHE Epidemiology Hotline. IDER houses subject matter experts on enteric and waterborne diseases, vectorborne diseases, vaccine-preventable diseases, and the hepatitides. The Fellow will man the Epidemiology Hotline and perform outbreak responses across all disease groups, enabling them to appreciate the diversity of how epidemiology is used in different program areas.

Epidemiologists in BEPHI serve programs across the agency (e.g. Bureau of Health Promotions (BHP) and the Bureau of Community Health Systems (BCHS)) allowing for the Fellow to see how epidemiologists interact across the Division of Public Health at KDHE. The Fellow will gain a detailed understanding of infectious disease surveillance and prevention program activities, as well as the cross sectional work the team does with social determinants of health (SDOH) and occupational data.

The Fellow will have the opportunity to review the literature and collaborate with counterparts to develop solutions to improve data collection completeness, accuracy, and timeliness. They will also analyze and develop reports (potentially automated) for partners (local health departments, healthcare providers). The Fellow will be mentored and supported to complete all requirements and grow beyond, by collaborating and participating in local and national meetings.

Day to day:

- Meet with primary and secondary supervisors (weekly to start)
- Work on projects
- Serve in IDER Epidemiology Hotline On-Call rotation
- Review literature and forums for up-to-date methods
- Attend trainings
- Attend daily phones meetings for awareness of reportable conditions updates
- Attend monthly IDER section meetings
- Collaborate with supervisors, section staff, and other epidemiologists in the BEPHI

- Participate in CSTE workgroup meetings, including Viral Respiratory Diseases Subcommittee and Vaccine-Preventable Disease Subcommittee
- Participate in public health webinars as applicable

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow

The Fellow will receive hands-on training on the use and application of data from Kansas's disease surveillance system, EpiTrax. There may be opportunities for utilization of other databases and systems, response dependent. Available statistical analysis software includes Statistical Analysis System (SAS), R, SatScan, and Tableau; support and training will be provided via Fellow's supervisors and mentors, in addition to online training.

Projects

Surveillance Activity Title: Infectious Disease Absenteeism Surveillance among Kansas Schools

Surveillance Activity Description:
Individual infections of viral respiratory diseases, like influenza and COVID-19 are not reportable in Kansas. Thus, alternative methods are deployed to measure the burden of these diseases and communicate activity and severity to stakeholders statewide. One method other state health departments utilize is monitoring of school absenteeism rates. The fellow will develop and deploy a pilot of a weekly sentinel site absenteeism survey, analyze incoming data, and communicate findings in a useful way.

Surveillance Activity Objectives:
- Work with the supervisor and Senior Epidemiologist overseeing respiratory virus surveillance programs to develop survey
- Identify and enroll sentinel schools to provide data. Manage participation over time
- Analyze incoming data and communicate findings to stakeholders
- Evaluate the program upon completion of respiratory illness season

Surveillance Activity Impact:
This surveillance project will expand the current reach of viral respiratory surveillance activities by measuring the burden of disease among a group that generally experiences mild illness and may not be captured through other surveillance methods (e.g., emergency department visits, office visits, and test-based surveillance).

Surveillance System Evaluation Title: Evaluation of Kansas's Viral Respiratory Surveillance System, RISENet

Surveillance System Evaluation Description:
Evaluate Kansas's Respiratory Illness Surveillance and Epidemiology Network, or RISENet, a sentinel site surveillance system that captures virologic data from collaborating providers throughout the state. Analyze testing data from Kansas's disease surveillance system, EpiTrax, which is automatically populated through electronic laboratory reporting.

Surveillance System Objectives:
- Work with the supervisor and Senior Epidemiologist overseeing respiratory virus surveillance programs to understand flow of data
- Review the incoming data to monitor submissions from participating providers and viral detections
- Provide data back to participating providers and other invested public health stakeholders through reports or data visualization

- Survey participating providers to identify challenges in participation
- Recommend areas for data collection workflow improvement
- Give an oral presentation

Surveillance System Impact:
This activity will help the external clinician collaborators, IDER section, and laboratory partners understand the impact of the program. The results will inform partners on viruses ciculating in the engaged communities, understand burden of disease in a state where these conditions are not reportable, and help inform prevention and control measures to implement. Will also strengthen the ability to detect novel strains of influenza and other respiratory viruses.

Major Project Title: Optimizing Varicella Case Investigations Based on Laboratory Reporting

Major Project Description:
This project aims to evaluate the burden of varicella case reports generated through electronic laboratory reporting (ELR) that ultimately correspond to shingles (herpes zoster) rather than true varicella (chickenpox) infections. Current public health surveillance systems capture laboratory results indicative of varicella-zoster virus (VZV) infection, but these reports often lack sufficient clinical context to immediately distinguish between primary varicella and reactivated shingles cases. As a result, public health investigators may be conducting unnecessary case investigations for individuals diagnosed with shingles, diverting resources from true varicella surveillance and outbreak response.

Major Project Objectives:
- Analyze ELR data to quantify the proportion of reported varicella cases that are later determined to be shingles upon investigation
- Evaluate patient age, test type, specimen source, and clinical presentation to help determine which reports warrant a full investigation
- Use findings to develop clear investigation criteria for local public health investigators, guiding the review of laboratory results in conjunction with clinical and demographic information
- Present findings and any guidance changes to local health department investigators

Major Project Impact:
By refining case investigation protocols and reducing unnecessary follow-ups on shingles diagnoses, this project will enhance the efficiency of varicella surveillance while maintaining robust detection of true varicella cases.

Additional Project #1 Title: Improving Surveillance and Reporting of Industry and Occupation Data for Reportable Conditions in Kansas
Project #1 Type: Surveillance Activity

Project #1 Description:
Examine industry and occupation data collected across all reportable conditions in the Kansas Surveillance System (EpiTrax).

Project #1 Objectives and Expected Deliverables:
- Determine completeness of the I/O fields by condition and by reporting organization
- Provide recommendations on improvement of data collection and quality
- Work with supervisor and EpiTrax team on refining I/O data collection form based on findings
- Build standard code that produces reports with demographic, industry, and occupation information by condition to be distributed to responding teams
- Run cluster analyses in SatScan for assessing worksite exposure/spread

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Project #1 Impact:
Workplaces have been identified during previous outbreaks, however maintaining active surveillance of industry and occupational categories of work has not been completed. By developing this work, it is possible for earlier identification of sources for reportable conditions. This work will also allow for the identification of partners and fields of work that need to be collaborated with when developing prevention and response to reportable conditions.

Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)

The Fellow will participate in outbreak investigations and any public health emergency responses, either in the field or incident command structure, working with a wide range of KDHE response staff and partners including local health departments, healthcare coalitions, federal partners, etc. Another opportunity for the Fellow to collaborate with partners may arise in response to a natural disaster (storms, floods, tornadoes, wildfires), the Fellow can collaborate with senior epidemiologists to implement disaster epidemiology methods (rapid needs assessments, morbidity and mortality surveillance, hospital surveys, etc.) in partnership with local, state, and federal partners. Disaster epidemiology methods are utilized to measure disaster-related impacts on affected populations, as well as evaluate demands on health care delivery systems and the effectiveness of health interventions and disease control efforts.

Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)

KDHE's Bureau of Epidemiology and Public Health Informatics (BEPHI) is tasked with the surveillance of notifiable infectious diseases and responsible for collecting, analyzing, and interpreting data that provide information on conditions of public health importance and the health status of Kansas. The Infectious Disease Emergency Response (IDER) Section within BEPHI conducts infectious disease surveillance and outbreak investigations and provides subject matter expertise to physicians, veterinarians, the public, and local health departments. The Fellow will be expected to participate in at least one major Infectious Disease and Emergency Response Section cluster or outbreak investigation (including: questionnaire design, interview training and case/control interviews, data collection and management, data analysis, after-action reviews and field investigation report writing). They will also be placed in the routine outbreak rotation.

Time allocation: ~1 day/week for 4-12 weeks for an outbreak response or ~20 hours/week for 3 weeks for an acute outbreak.