Substance Use/Mental Health, Infectious Diseases

Ottawa County Department of Public Health, Department of Epidemiology

Holland, Michigan

Assignment Description

The CDC/CSTE Applied Epidemiology Fellow will be assigned to the Epidemiology (Epi) section at OCDPH. The Epi section is embedded within the Health Planning and Promotion (HPP) program and is staffed with two full-time cross cutting Epidemiologists and a masters-trained biostatistician. The Epi section is responsible for providing support for all OCDPH initiatives and various community-driven programs. Surveillance of communicable disease, tuberculosis, and sexually-transmitted disease (STD) is a mandated function of the Epi section; additional primary responsibilities include: community surveying (often around substance use), needs assessments, vital statistics analysis, drug overdose and suicide prevention, and performance management and accreditation. The OCDPH Epi section provides a full cross cutting experience that can be tailored to a Fellow’s interest or career objectives.

Day-to-Day Activities

The Fellow will be provided with an ergonomically appropriate work station that includes a computer, dual monitors, and a telephone. The Fellow will be physically embedded within Epi section and will have consistent near daily interaction with formal and informal mentors. Daily rhythm will likely involve a blend of meetings, analysis and writing time, and community interaction. After an orientation period focused on building relationships, the Fellow’s primary duties will be Fellowship competencies, particularly an evaluation and improvement of a surveillance system. Secondary goals will be to improve data management and analysis skills, with the vision of building a strong understanding of data systems and informatics. The Fellow will also be given the opportunity to interview communicable disease cases, develop outbreak questionnaires, and take lead on annual drug overdose and suicide surveillance reports.

Through their tenure the Fellow will have formal weekly meetings with their secondary mentor that focus on Epidemiology skills, critical thinking, and professional development. Fellowship goals and assignments will be managed using project management software (Trello or similar product) to clearly define objectives and celebrate success. Fellow needs and interests will also be discussed with the secondary mentor. Bi-weekly meetings with the primary mentor will prioritize leadership skills and how an Epidemiologist can effectively support the clinical arm of public health and medical community partners.

As the Fellow’s comfort-level and skill increase, additional opportunities will be provided for projects that align with OCDPH initiatives and the Fellow’s interests. The Fellow will be encouraged to lead or support speaking events and community engagement. The Fellow will be assigned lead roles on surveillance projects, accreditation objectives, and innovation endeavors. And as a highly trained public health professional, the Fellow will eventually be expected to work independently and with little direction to build systems, forge and maintain relationships, and communicate with external
stakeholders. At the culmination of a Fellowship with OCDPH, the Fellow will be prepared to effectively contribute, innovate, and lead at any health department in the United States or its Territories.

**Potential Projects**

**Surveillance Activity**  
**Aggregate Influenza Surveillance [General Infectious Disease]**

Influenza is a common respiratory condition that has a broad impact in Ottawa County. School absences, healthcare patient surge, employee illness, and outbreaks in at-risk populations are all tangible effects of influenza transmission. At OCDPH, influenza surveillance is evolving to include positivity metrics, syndromic data, and aggregate reporting from schools and outpatient healthcare centers. The data is obtained from numerous sources and combined into one central data sheet for visualization and analysis. Through the influenza season, the Fellow will collect and analyze surveillance data and create weekly reports that are actively distributed to thousands of recipients across the region.

The Fellow will work with the Epi, Communicable Disease, and Immunizations teams to learn the natural history of influenza, influenza prevention strategies, outbreak response, and effective surveillance. Through this training the focus will be on best practices, data-driven metrics, and fostering relationships for surveillance objectives. The Fellow will be encouraged to innovate where processes or products can be improved. This activity will provide a foundational experience that involves nearly the full surveillance cycle – from systematic collection through dissemination.

**Surveillance Evaluation**  
**Surveillance of Drug Overdose Deaths and Drug Overdoses in Ottawa County [Injury – Drug Overdose]**

Ottawa County experiences about 30-40 drug overdose deaths each year. These deaths are preventable events that have a profound social impact on the community. To help support overdose death prevention, OCDPH conducts surveillance of deaths using two systems – one through the local Medical Examiner (using a data system called MDI-Log), and one through Vital Records. Each system has opportunities and challenges, and neither offers an ideal surveillance solution.

Evaluation of the current Drug Overdose Death system would involve extensive data management and develop the Fellow’s skills using SAS (or comparable software), linking techniques, keyword searches, and use of ICD10 codes. The Fellow would be expected to evaluate data sources, process, and systems and provide a final report to internal stakeholders. The Fellow would also lead improvement efforts and develop the annual drug overdose surveillance report. Through this process the Fellow may also work closely with the Ottawa County Opiate Taskforce to evaluate other potential drug overdose data sources such as OD Map, which could augment county-wide overdose surveillance by incorporating non-fatal overdose events and help develop prevention strategies.
**Major Project**  
**2021 Youth Assessment Survey (YAS) [Substance Use/Mental Health & Chronic Disease]**

Since 2005, OCDPH has worked with community partners to deploy a community-wide school-based survey of 8th, 10th, and 12th graders called the Youth Assessment Survey (YAS). The YAS is a biannual teen survey that includes questions on health-related behaviors that contribute to leading causes of death and disability among teens. Common themes on the YAS are substance use, mental health, and chronic disease. The YAS is uniquely local because it is facilitated by a local committee that includes United Way and other local non-profits, schools, and public health. Schools and other stakeholders can submit questions and survey topics to address local issues. The YAS also balances local input with strong scientific method basing many questions on the Youth Risk Behavioral Survey (YRBS) and the Michigan Profile for Healthy Youth (MiPHY), and employing sampling, weighting, and high-quality reporting.

The Fellow would be integral in the YAS planning process, attend monthly committee meetings, recruit schools, and engage stakeholders. The Fellow would use Qualtrics to develop the questionnaire, would support the data collection process, and lead the analysis and report development. Each cycle thousands of responses are collected, resulting in a rich data set that can be used to trend behaviors over time. With support from the Epi Section, the fellow would be expected to analyze the YAS data collected in 2021 and would be responsible for data cleaning, weighting, recoding, trend analysis, report creation, and some presentation to the community.

The YAS is an exceptional opportunity for the Fellow to be involved in an entire cycle of community surveying and will prepare the fellow for robust survey development, data collection strategies, community partnerships, categorical analysis, and process thinking.

**Additional Project**  
**Pathways Data Analysis, Visualization, and Reporting [Chronic Disease, Substance Use/Mental Health]**

Across the nation many healthcare and public health organizations are recognizing the impact of Social Determinants of Health (SDOH). Because housing, transportation, and many other tangential issues directly impact health, OCDPH and its community partners developed a pilot program utilizing Community Health Workers (CHWs) to help underserved residents navigate health issues. This program is called Ottawa Pathways to Better Health (Pathways). Pathways is a community outreach program that enrolls clients that are Medicaid eligible and have at least two chronic conditions. Partnering with the client, CHWs identify health issues or social determinants and collaboratively assign “pathways” for the client. These pathways become goals for clients and help guide referrals, education, and resource allocation.

Data from hundreds of clients are collected and maintained in a database (CCS). Each year a portion of this data is analyzed and reported in a comprehensive report which is distributed to community foundations and healthcare partners. A wealth of data on program process, client outcomes, Adverse Childhood Experiences (ACEs), and many other themes remains unanalyzed. To support the Pathways program the fellow would develop data systems to summarize Pathways data, visualize the data, and report to internal program leadership and the CHWs. Data visualization software (e.g. PowerBI) would be utilized to create reports and dashboards that would illustrate program information and key metrics.
This information would be used to inform process and help develop strategies to improve enrollment, retention, and client outcomes.

This project would provide the Fellow with insight into program management and process improvement strategies while leveraging visualization and business analytics to highlight key issues and inspire positive change.

**Additional Project**  
**Develop and Refine Communicable Disease Response Protocols and Communications [General Infectious Disease]**

OCDPH maintains guidance documents for case investigation and outbreak/cluster response. The Fellow would lead the revision of protocols based on updated state and national guidance, best-practices, and biological plausibility. One guidance document that the Fellow may be responsible for editing is the Varicella Outbreak guidance document which incorporates State of Michigan, CDC, and ACIP recommendations. The guidance also sets the standards for exclusion of unimmunized, exposed persons in school and other congregate settings, and is essential for educating affected persons in outbreak settings.

The Fellow would support or lead a small workgroup to refine guidance document content, update links, and reformat structure. The fellow would also update any communication tools associated with each document such as exposure letters, exclusion letters, and community FAQs.

**Preparedness Role**

OCDPH employs an Emergency Preparedness Coordinator who provides team training and organizes scheduled exercises. The Fellow would be given work time to complete department mandated online ICS trainings, and may also receive ICS 300 and 400 in-person trainings. Within the Incident Command structure the Fellow would likely be placed in an active role within the Operations section (e.g. Data Management Team) or under the Planning Section as Situation Unit Leader. Because most live public health situations requiring Incident Command structure involve an outbreak or disease exposure, Emergency Preparedness training will be provided through an infectious disease paradigm.

**Additional Activities**

- Shadowing field staff including: food safety inspectors, lead home assessors, immunization clinic nurses
- Accreditation Cycle (2021), Michigan Local Public Health Accreditation Program
- Quarterly ELC Meetings with State of Michigan and Local Public Health Professionals
- Emergency Preparedness Trainings and incidents
- Publication – as opportunities arise the Epi team (including the Fellow) may seek publication in peer-reviewed journals such as the MMWR.
**Mentors**

**Primary**  
Paul Heidel MD, MPH  
Medical Director

**Secondary**  
Derel Glashower MPH  
Senior Epidemiologist