

ID: 73019509

Maternal and Child Health, Injury - Host Site Description

Oakland County Health and Human Services

Assignment Location: Pontiac, US-MI
Oakland County Health and Human Services
Health and Human Services

Primary Mentor: Lauren Fink, MPH
Epidemiologist
Oakland County Health and Human Services

Secondary Mentor: Mike Swain, MPH, PhD
Epidemiologist
Oakland County Health Division

Work Environment

100% Virtual

Assignment Description

OCHD offers an exceptionally well-rounded experience for our fellows. The fellow will be placed in the Planning & Evaluation unit, which provides epidemiological and evaluation support across the department. We work on a wide variety of topics and programs, so each day will be a little bit different. The fellow will have mentorship and dedicated time to complete rewarding long-term projects, but they will also respond to shorter-term data requests from across the department. These “quick win” projects allow the fellow to apply the toolkit of epidemiology to a wide variety of topics. The fellow will primarily work with surveillance and programmatic data and will focus on maternal and child health and injury related topics. Tasks may include summarizing data, interpreting results, presenting findings and making recommendations.

The fellow will be expected to write, run, and maintain R code (training will be provided if needed), prepare reports and dashboards (using Power BI and/or R), and create data visualizations and maps. There will be opportunities to attend meetings, community events and webinars and to network with staff across the department. The fellow will have opportunities to present their findings to leadership and community groups.

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

- Michigan Disease Surveillance System (MDSS)
- Michigan Syndromic Surveillance System (MSSS)
- MyInSight: Oakland County's electronic medical record (EMR) system
- Michigan Care Improvement Registry (MCIR)
- Oakland County's Forensic Case Management System (FCMS)
- Oakland County cooling towers
- Oakland County radon results
- Oakland County laboratory results (water focused arsenic, nitrates, etc.)

The fellow will have access to the following programs, web-based applications, and software: R, Excel, Power BI, NVivo (for qualitative data), MySidewalk (for creating reports, maps, and data visualizations), ArcGIS (mapping), Qualtrics (survey software)

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Projects

Surveillance Activity Title: Modernizing Lead Exposure Surveillance

Surveillance Activity Description:

This project focuses on analyzing lead surveillance data to identify trends in lead exposure across Oakland County. The fellow will clean and manage data from multiple sources, assess geographic and demographic patterns, and create reports to highlight high-risk areas and populations. The fellow will work closely with outreach nurses who provide services to families impacted by lead exposure as well as our environmental team that conducts investigations to uncover the sources of lead exposure. One goal of this project will be to harmonize service data across the two teams along with population data obtained from the state health department. Under the guidance of a highly trained and experienced environmental health epidemiologist, the fellow will gain experience in environmental health surveillance and data management while supporting community outreach efforts.

Surveillance Activity Objectives:

- Clean and integrate lead surveillance data from multiple sources while ensuring accuracy and consistency.
- Analyze lead exposure data to identify geographic and demographic trends.
- Produce periodic reports and visualizations summarizing findings and providing actionable recommendations for mitigation and prevention efforts.
- Collaborate with public health teams to validate findings and ensure the relevance of surveillance results.
- Present findings to stakeholders to support resource allocation and intervention planning.

Surveillance Activity Impact:

This project will strengthen Oakland County's ability to identify and respond to lead exposure risks, especially in vulnerable populations. By addressing data challenges and producing actionable insights, it will support targeted interventions and raise awareness about lead exposure prevention. Additionally, the project will build the fellow's skills in data cleaning, management, analysis, and communication, preparing them for future epidemiology projects.

Surveillance System Evaluation Title: Validation of Injury-Related National Syndromic Surveillance Program (NSSP) Queries for Michigan Syndromic Surveillance System (MSSS)

Surveillance System Evaluation Description:

In Michigan, local health departments utilize Michigan Syndromic Surveillance System (MSSS) rather than the more widely used national platform, ESSENCE, due to differences in system administration and data access policies. Unlike ESSENCE, which operates as a national platform, MSSS is managed at the state level, allowing for tailored surveillance efforts but limiting the ability of local epidemiologists to utilize standardized national queries and queries from other jurisdictions developed for ESSENCE. These queries are available from resources such as the National Syndromic Surveillance (NSSP) Knowledge Repository.

This project focuses on translating and validating existing queries for use in MSSS, with an emphasis on tracking injury-related visits. The fellow will ensure the accuracy, consistency, and usability of MSSS queries to monitor trends in injuries such as firearm incidents, traffic accidents, and other acute presentations. Collaborating with state and local epidemiologists, the fellow will test and refine queries to enhance the utility of syndromic surveillance data for injury prevention and response at the local level in Michigan. This effort will yield practical resources for local jurisdictions statewide.

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Surveillance System Objectives:

- Identify and prioritize high-impact queries for validation in collaboration with public health teams.
- Translate queries from resources such as NSSP’s Knowledge Repository for compatibility with MSSS, focusing on injury indicators.
- Validate the performance of queries through testing and refinement.
- Document the validation process and create user-friendly guidelines for future use.

Surveillance System Impact:

This project will improve Oakland County's ability to monitor injury trends using the Michigan Syndromic Surveillance System (MSSS). It will also enhance MSSS usability for other local health departments in Michigan, supporting better public health interventions statewide and giving the fellow opportunities for cross-jurisdiction collaboration.

Major Project Title: Using Data to Inform Childhood Immunization Strategy

Major Project Description:

This major project integrates two complementary lines of work to inform local immunization strategy and ensure all children in the county have access to quality healthcare. The fellow will support ongoing surveillance of childhood immunization coverage using monthly exports from the Michigan Care Improvement Registry (MCIR) to monitor trends and identify priority geographic regions. The fellow will also assist with applied bioethics research on how local pediatricians respond to families who refuse some or all vaccines, including the practice of patient dismissal. This research, conducted in partnership with Oakland University, contributes to efforts to improve access to routine pediatric care among un- and under-vaccinated children.

The fellow will be positioned as a trusted advisor for OCHD’s broader vaccine confidence initiative focused on trust-building and equity. They will help translate findings into products that can be used to make decisions for community outreach, provider engagement, and other targeted public health actions.

Major Project Objectives:

- Maintain and document reproducible workflows to clean, validate, and analyze immunization coverage data and trends.
- Produce periodic summaries highlighting meaningful changes and priority geographies/populations.
- Contribute to research on vaccine-related access barriers in pediatric primary care (e.g., patient dismissal or non-acceptance).
- Develop actionable products (dashboards/briefs/talking points) and present findings to stakeholders to support coordinated action.

Major Project Impact:

This project bolsters the county’s defense against vaccine-preventable disease outbreaks by supporting more targeted outreach, efficient resource allocation, and clearer situational awareness for leadership and partners.

Additional Project #1 Title: Using Medical Examiner Data to Inform Injury and Violence Prevention

Project #1 Type: Other

Project #1 Description:

This project will enhance injury epidemiology efforts in Oakland County using data from the Medical Examiner’s Office (MEO). Under the guidance of an epidemiologist experienced in injury surveillance and fatality review, the fellow will examine trends in firearm-related injuries, suicides, traffic fatalities, drowning, and other injury incidents to inform data-driven prevention strategies.

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As part of this work, the fellow will participate in the county's Suicide Fatality Review (SFR) team, which was developed in 2025 as a national demonstration site with the support of the Intergovernmental Institute for Research (IIR). Key responsibilities include data cleaning, analysis, visualization, and interpretation.

This project will involve close collaboration with the county's Medical Examiner Office, Suicide Prevention Task Force, and other key stakeholders.

Project #1 Objectives and Expected Deliverables:

- Clean, manage, and integrate injury data from multiple sources to enhance the availability and usability of injury data for stakeholders including Medical Examiner Office, health division leadership, and community partners.
- Work with the Medical Examiner's Office and epidemiologists to validate and refine data.
- Contribute to the development of the Medical Examiner Office annual report.
- Develop briefing materials to inform prevention strategies.

Project #1 Impact:

This project will enhance Oakland County's capacity to analyze and apply injury data for prevention. By identifying high-risk populations and geographic areas, the fellow's work will support targeted interventions, resource allocation, and policy decisions. The fellow will gain hands-on experience in injury epidemiology, data analysis, and stakeholder collaboration, helping to advance injury prevention efforts.

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

The fellow's syndromic surveillance project will help build department capacity for monitoring emerging threats. The fellow will also support general emergency preparedness and response activities by participating in scheduling trainings and response activities. Preparedness and response activities will account for approximately 5% of the fellow's time.

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

The fellow will support investigations of various maternal and child health and injury events. The fellow will have the opportunity to help shape the projects that meet this competency, with support of their mentor. For example they may wish to create alerts using biospatial, our EMS data platform, to identify potential spikes in various types of injuries. They may assist in analyzing syndromic surveillance data to identify trends in topics such as firearm injuries, traffic crashes, and suspected suicide clusters.

If interested, they may also collaborate with or shadow the communicable disease team during outbreak investigations. Time allocation will be flexible based on department needs and fellow interest.