Host site: State of Michigan Michigan Department of Health and Human Services

Assignment Location: Lansing, Michigan

Primary Mentor: Jeffrey Duncan, PhD-Biomedical Informatics

Secondary Mentor: Beth Anderson, MPH

Agency Description:

MDHHS is unique in their structure in that they organize most of the data users and data owners together. The Division of Vital Statistics and the Chronic Disease Epidemiology Section (CDES) are both organized in the same Bureau and, when working in-person, have offices on the same floor. This allows for easy data sharing and collaboration. Data sources in our work areas include birth and death files, cancer registry, Behavioral Risk Factor and Pregnancy Risk Assessment Monitoring surveys, and in- and out-patient hospitalization data.

CDES Mission: The Chronic Disease Epidemiology Section provides surveillance data to guide evidence-based public health programs and policies to reduce disparities and improve health outcomes in Michigan. The section develops diverse partnerships to raise community awareness and educate stakeholders and the public.

CDES Vision: Through epidemiologic methods with a focus on surveillance, evaluation, and quality improvement of care support, we will reduce health disparities and improve health behaviors and outcomes for all Michigan residents.

Assignment Description:

This position is cross cutting between vital records and chronic disease epidemiology. Both areas, when working in the office, are located in the same building and floor. Currently, we are given the option to be 100% remote and don't see that changing in the near future. The fellow would meet with the two mentors at least once a week to go over progress and discuss next steps. Both of the projects would have teams associated with them and the fellow would be in contact with the teams daily through meetings and emails.

Preferred Background & Skills:
This position will mainly be working with chronic disease conditions, however, it is not necessary to be an expert in these areas. We will have subject matter experts on staff that can teach and get the fellow up to speed and answer questions.

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

The fellow would get a very well rounded experience with MDHHS. They will gain knowledge on chronic data systems and how they can be linked together. They will work on creating a web-based query system that users can use to look at three different data sources at once. This will allow easier access to data at a timelier manner. They will also have access to the other informatics staff in the department including the Michigan Disease Surveillance System and the modernization of that system. They will also gain a knowledge of Microsoft power BI or similar software to create data dashboards for external sharing of data.

Potential Projects include:

*Host sites have listed up to 5 projects*

Project 1: Coordination of data systems within Michigan: A pilot using top cancer causes in residents.

The intended objective will be to successfully establish a new web-based data system for the top cancers in Michigan that integrates multiple data sources and improves workflow and user experience. This pilot will serve as a proof of concept for expansion of the system to other conditions and program areas. We anticipate that this system will improve the timeliness and accessibility of the data for internal and external partners. If time allows, expand beyond cancer to other chronic disease areas.

Currently, Michigan has several data systems that include data on cancer pathology, cancer diagnosis and other chronic diseases, however, these data systems are siloed in different areas of our department and are found across various webpages. This project would develop a localized query system for this data. The project will use the top 4 types of cancer in Michigan, prostate, female breast cancer, lung/bronchus and colorectal, to pilot the development of a new system. Eventually, the system will expand to include all chronic diseases and other conditions. This project will focus on combining our mortality, hospitalization, and cancer registry data. Currently, data users must visit three separate websites to access all of this data or submit a time-consuming data request. By integrating multiple data systems into a single web-based query system, we will improve accessibility of the data for our users. This system transformation would allow internal and external programs, partners, policy makers, and others to readily retrieve data from a single location and support their unique data needs. We anticipate developing a robust data system that will improve our communication of the data. This project will look to other states’ successful models, such as Utah’s Public Health Indicator Based Information System, to incorporate best practices and lessons learned for developing this new system.
Project 2: Chronic Disease Registry

CHRONICLE collects information from automated Admission, Discharge, and Transfer (ADT) messages that are sent within and between healthcare facilities, payers, and health information exchanges (HIEs), such as MiHIN, to coordinate a patient’s care. These messages contain a patient’s demographic and clinical information, which are examined for their inclusion of a hypertension or stroke ICD-10-CM diagnosis code and subsequently passed through to CHRONICLE if present. As other data sources and chronic conditions are added they will be included and connected to Chronicle. This position would help direct them team on solutions to make this system work efficiently.

CHRONICLE will provide a longitudinal repository of chronic disease, health behavior, COVID and other lab data, and social determinants of health data that will strengthen our department’s capacity for understanding stroke and hypertension across the lifecourse and help us to identify the most appropriate interventions and prevention measures. We also aim to provide useful data to Michigan health systems and providers on the patients they treat over time and across locations or health systems without introducing any additional burden. The overarching goal for CHRONICLE and the interventions it may drive is to improve the health of Michigan residents by reducing health disparities, connecting patients with appropriate resources, and improving health behaviors and outcomes.

Project 3: Newborn Screening Quality Assurance Report Modernization

The Newborn Screening Program maintains screening information in a laboratory information management system. The program’s epidemiologist retrieves and formats key data elements to create quarterly quality assurance reports for birth hospitals. These elements include timing of screen collection, timing of screen receipt, and specimen quality. These reports are used by birth hospitals to monitor their performance and identify areas for improvement. This position would create a dashboard to monitor statewide performance over time and review the current report to determine if data visualization could be improved.

This dashboard will provide a longitudinal repository birth hospital performance on key metrics designed to monitor newborn screening performance. We aim to provide useful data to Michigan health systems in a format that is easier to understand and track over time. The overarching goal for modernizing the data included in the quality assurance reports is to ensure the data is most helpful to birth hospitals and can be used for process improvement to ensure the best health outcomes for newborns with rare disorders identified through screening.

Additional information about the placement:

No additional information provided