Minnesota Department of Health

Assignment location:
St. Paul, MN

Minnesota Department of Health
Office of Data Strategy and Interoperability

Primary Mentor: Aasa Dahlberg Schmit, Bachelor of Computer Science
Director, Office of Data Strategy and Interoperability
Minnesota Department of Health

Secondary Mentor: Chris Brueske, Bachelor of Arts
Lead Data Strategist, Office of Data Strategy and Interoperability
Minnesota Department of Health

Work Environment: 100% Virtual

Assignment Description

Agency Description:
Minnesota’s public health system is known as one of the best in the nation. It is built upon a strong partnership between the Minnesota Department of Health (MDH), local public health agencies, tribal governments and a range of other organizations. The department’s mission is to protect, maintain and improve the health of all Minnesotans. It has about 1,500 employees and an annual budget of approximately $500 million in state, federal and fee-based funds. An agency overview can be found here: https://www.health.state.mn.us/about/index.html.

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow:
A broad range of tools are made available to the Fellow through the standard MDH operating environment. The Office suite of products offers access to analytic tools like Microsoft Excel and Access. Additional software can be purchased or licensed and installed for the Fellow workstation (Microsoft Visio, Endnote, web development software such as Adobe Dreamweaver, Tableau, SAS, ESRI ArcGIS, etc.). Many opportunities for training on the tools is available. Datasets will be made available depending on the need for each of the projects. We expect that there will be a need for access to the...
data in our datalake, Disease surveillance data from our disease surveillance system, eCR, ELR, Vital Records, Immunization records, COVID lab tests and results. Analyses are done in SAS and/or R with Tableau as a visualization tool. We have one ongoing project using FHIR.

Any additional information about the placement: none provided

Describe the Preferred Background and Skills the Ideal Fellow For This Site Would Have:

Experience with data science, knowledge of promoting interoperability activities and the data standards related to PI projects. Knowledge of case reporting and electronic lab reporting. Knowledge about and interest in how to tell stories with data, especially related to health equity. Visualization tools experience. Data analytics experience.

Projects

Project 1 Title: Public data portal modernization to Tableau

*Project objectives and expected deliverables:*

1. Participate in planning, implementation and evaluation of modernizing the MN Public Health Data Access Portal to Tableau data systems.
2. Develop user-friendly interactive dashboards to share information on trends, maps, and risk factors.
3. Increase availability and customizability of data for end users.
4. Conduct key informant interviews and other needs assessment/evaluation activities with Local Public Health, community, and other partners. This DMI project is sponsored by the Environmental Public Health Tracking program. The content area of focus for the fellow will be biomonitoring data from NHANES and MN projects, with a focus on telling data stories about health inequities using Tableau. Visit our portal here: https://data.web.health.state.mn.us/web/mndata

*Expected public health impact from this project:* The content area of focus for the fellow will be biomonitoring data from NHANES and MN projects, with a focus on telling data stories about health inequities using Tableau. Biomonitoring data are important for informing public health interventions and policy actions. We can be doing more with this data and for our partners with better public data sharing and tools. This DMI project is sponsored by the Environmental Public Health Tracking program. Visit our portal here: https://data.web.health.state.mn.us/web/mndata

Project 2 Title: Electronic Case Reporting Metrics and Data Quality

*Project objectives and expected deliverables:* The objective of the eCR onboarding project is to add more facilities who are sending eCRs to MDH as well as increasing the number of data elements mapped to discrete elements in our MEDSS system. A part of this project is to work with our data lakes team to identify and build out views for eCR data, make the data available for SQL querying and to build Tableau dashboards for metrics related to data quality and onboarding progress. This project is currently moving
from an IT implementation project to a MDH lead onboarding/expansion project. We also have a subproject where the Fellow will take the lead, this is a Data Analysis project, to compare how ELR data/data quality compares to ECR data fields/quality (for race/ethnicity data in particular).

*Expected public health impact from this project:* The eCR project is aimed at reducing the burden of reporting of case reports and to provide better and more timely case information for public health. By evaluating the quality of key demographic data (such as race/ethnicity) we can improve the ability to identify vulnerable populations and/or populations with higher prevalence of disease.

**Project 3 Title: Data Lake Lifecycle Assessment**

*Project objectives and expected deliverables:*

1. Evaluate entire data lakes infrastructure, current MDH use, and identify quality improvements.
2. Complete a data lifecycle assessment for data that goes into the data lake.
3. Suggest improvements to implement infrastructure, governance, and other system processes.

*Expected public health impact from this project:* The data lakes project aims to provide access to data across siloed MDH applications and databases and to provide the capability to use data in new ways. Currently, much of our public health work is limited by siloed data systems, so improving our data lakes infrastructure will increase our ability to securely and appropriately combine datasets to provide new public health knowledge. This could potentially lead to more high-quality data sharing with our Minnesota Public Health System (LPH) and other trusted partners.

**Project 4 Title: Centralized data sets, processes, and tools**

*Project objectives and expected deliverables:*

1. Work with inter-agency team to gather data standards for data sets with high shared value and need for consistency (e.g., census denominator data).
2. Promote best practices for data governance.
3. Work with internal stakeholders to identify shared data needs.

*Expected public health impact from this project:* Efficient and consistent shared data resources will improve analysis quality and timeliness. This seems like a simple project, but gathering, communicating, and creating repeatable processes and standards for shared data are foundational aspects of successful data/technology projects.

**Project 5 Title: OVR to MEDSS data project**

*Project objectives and expected deliverables:* The OVR to MEDSS is a project to integrate data from the Vital records system into our disease surveillance system (MEDSS). This project is a collaboration
between MNIT, the Office of Vital records and IDEPC and a component of our DMI activities. The deliverable is to make death information available in our MEDSS system. The work contains creation of specifications, testing and evaluation of the success of the implementation.

*Expected public health impact from this project:* The MEDSS system contains information about all infectious diseases in MN but also is the system for newborn screening follow-up. By receiving vital records information directly into the system we can ensure accurate birth and death information within our records in MEDSS, as this is especially helpful during case management where information about deceased individuals would be available to the case workers. Currently, staff are doing case management partially from out of date first person information, resulting in wasted time and efforts of staff, and disruption to family members still processing loss of loved ones. The agency is very interested in expanding the scope of MEDSS to other diseases, and this enhancement would help further develop our use of this system to other departments.