

**ID: 45663876**

**Infectious Diseases, Infectious Diseases - Host Site Description**

**Minnesota Department of Health**

**Assignment Location:** St. Paul, US-MN  
Minnesota Department of Health  
Infectious Disease Epidemiology, Prevention and Control

**Primary Mentor:** Beth Gyllstrom, PhD, MPH  
Epidemiologist Principal  
Minnesota Department of Health

**Secondary Mentor:** Ashley Fell, MPH  
Epidemiologist Senior  
Minnesota Department of Health

**Work Environment**

Hybrid

**Assignment Description**

The fellow will be mentored by Dr. Beth Gyllstrom, Epidemiologist Principal, and Ms. Ashley Fell, the Long COVID Epidemiologist (within the IDEPC HERDs Section) and will also work with epidemiologists within the HERDs Section, the HPCD division and IDEPC overall. The fellow will be active in HERDs Section activities, including surveillance, outbreak investigation, emergency response, and special projects. This person will play a role in our collaborative long COVID enhanced surveillance work.

In addition to providing a solid foundation in emerging infectious disease epidemiology, response, and prevention, this position presents an exciting opportunity for a fellow to work in a professional, academically minded health department. The HERDs section is currently refining how we proceed with endemic surveillance activities for COVID-19, prepare for the next pandemic, and broaden surveillance and public health communication efforts from COVID-19 to include other viral respiratory pathogens (i.e., influenza and RSV). Notably, influenza surveillance activities moved to the HERDs section in November 2025. In addition, MDH continues to focus efforts on identifying populations at increased risk of severe outcomes from viral respiratory pathogens as part of promoting health equity in Minnesota.

The fellow will be organizationally housed in the HERDs Epidemiology and Data Unit. The fellow will attend internal and external meetings, including those for infectious disease epidemiology and lab staff (e.g., Morning Report), the HERDs Epidemiology and Data Unit meetings; meet weekly and as needed, with mentors to discuss projects, progress, and opportunities; develop and execute epidemiologic projects; develop public health communications; write scientific reports; increase and maintain subject matter expertise by reading peer-reviewed literature and other relevant documents and by participating in online training; and present work products, including scientific posters and presentations at local, state, and national scientific conferences, and prepare manuscripts.

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

Available software includes: SAS, R, Tableau, Power BI, Epi Info, REDCap, Microsoft suite including Excel, and End Note. Surveillance systems and databases available include: MDH Public Health Laboratory database (Laboratory Information Management System [LIMS]), Minnesota Electronic Disease Surveillance System (MEDSS) database, and Oracle BI Discoverer. Other databases and software as needed (e.g., ArcGIS software, Minnesota Registration and Certification database, etc.).

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## **Projects**

### **Surveillance Activity Title: Prospective, statewide, enhanced surveillance of long COVID in Minnesota**

#### *Surveillance Activity Description:*

Throughout the COVID-19 pandemic response, there was growing awareness of potential long-term sequelae post active infection. Long COVID or post-COVID conditions has been a topic of study and interest at the state, national and international level. MDH was one of the first health departments to establish a Long COVID program, housed within the Health Policy and Chronic Disease (HPCD) division, whose work is conducted in close collaboration with the IDEPC HERDs section. The large number of potential signs and symptoms, as well as changing definitions, have made it difficult to fully characterize the magnitude and burden of long COVID in populations. MDH piloted a single-county, prospective enhanced surveillance project for long COVID in spring 2022. Early results were encouraging and prompted MDH to expand long COVID surveillance statewide in fall 2024. The design incorporates an initial phone interview one month after specimen date and has follow-up data collection at 3-, 6-, and 12-month post-infection. We anticipate having a full year of complete, statewide data in spring 2026, which is well-timed for a fellow to assist with analysis and conduct an evaluation of the long COVID prospective surveillance system.

#### *Surveillance Activity Objectives:*

- Work on a team comprised of staff from IDEPC and the Health Promotion Chronic Disease (HPCD) division to enhance surveillance of long COVID in MN, including methods development, analysis and communications to key stakeholder audiences.
- Compare and evaluate the findings of MDH long COVID enhanced surveillance with the work of other jurisdictions and academic institutions.
- Develop recommendations for future long COVID surveillance and how to target resources effectively.

#### *Surveillance Activity Impact:*

Long COVID is estimated to affect 8-15% of persons who had SARS-CoV-2 infections. Methods differ across projects and studies. The potential for prolonged disability and poor health has serious implications for public health, particularly as it affects persons of working age. This project aims to better describe the experiences of persons living with Long COVID to help identify the need for resources and support.

### **Surveillance System Evaluation Title: Evaluation of Minnesota Long COVID Enhanced Surveillance**

#### *Surveillance System Evaluation Description:*

Minnesota has conducted one retrospective surveillance project to assess long COVID in Minnesota, as well as a prospective pilot project. We recently expanded long COVID enhanced surveillance statewide. We have not had the opportunity evaluate these systems in terms of their ability to provide timely and relevant data for decision-making, both individually and collectively. We anticipate having a full year of complete data in fall of 2025, which is well-timed for a fellow to assist with analysis and conduct an evaluation of the long COVID surveillance system. The fellow would assist with a comprehensive evaluation of our COVID-19 surveillance system.

#### *Surveillance System Objectives:*

- Evaluate strengths/limitations of the current individual data systems and sources.
- Evaluate data reporting mechanisms and timeliness of data availability.
- Provide recommendations for how to "right-size" our enhanced Long COVID surveillance system, given potential resource limitations in the future.

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*Surveillance System Impact:*

The COVID-19 active pandemic response required intensive state and local resources in Minnesota, both in terms of staffing and data systems. As the active portion of the COVID-19 response ended, it became apparent that a significant portion of Minnesotans were still experiencing longer term sequelae. Minnesota is one of the only states to be addressing long COVID collaboratively as a partnership between our infectious and chronic disease teams. There are a variety of approaches to try and assess the burden of long COVID, but most have not been evaluated. The time is right to evaluate our enhanced long COVID surveillance and make recommendations for a sustainable system that can continue, acknowledging likely decreases in resources (both staffing and financial). It is critical to identify those components of a long COVID surveillance system that result in data to support policymakers and citizens in decision-making around interventions and mitigation strategies.

**Major Project Title: Analysis of enhanced congenital syphilis surveillance**

*Major Project Description:*

MDH is currently abstracting all congenital syphilis births in MN using the CDC SET-NET REDCap tool. MN has had persistently high rates of congenital syphilis since 2019 and preliminary 2025 data suggest a slight increase in cases compared to 2024. The fellow will have an opportunity to combine routine surveillance data from MEDSS, plus medical chart abstractions, to help characterize congenital syphilis births in MN and identify potential opportunities for intervention. This work will be shared with the Congenital Syphilis Review Board (CSRB), a group that advises MDH on recommendations to reduce congenital syphilis births to zero. The fellow will also have the opportunity to apply a jail roster matching approach to the SET-NET data file to identify births associated with incarceration during pregnancy using an established methodology.

*Major Project Objectives:*

- Analysis of SET-NET variables, with an emphasis on social determinants of health and missed opportunities for intervention. In addition, consider how to evaluate the recent update in recommendations to implement testing three times during pregnancy (at first prenatal visit, 28-32 weeks, at delivery) to assess potential changes in provider
- Written report and manuscript for publication
- Presentation for the CSRB (and potentially CSTE or other conferences)

*Major Project Impact:*

These data will help MDH continue to address elevated rates of congenital syphilis and identify action plan tasks to work to reduce the rates in MN. Congenital syphilis can be prevented--and this work is a high priority of the public health (state, local, Tribal), community and provider stakeholders in MN.

**Additional Project #1 Title: Tableau/Power BI Dashboard Development and Enhancement**

**Project #1 Type: Major Project**

*Project #1 Description:*

Internal and external data dashboards, currently powered by Tableau but transitioning to Power BI, have become an important part of the daily work of MDH. Some areas within HERDs already have developed dashboards, but not all. There is a need for assistance in developing internal dashboards for HIV/STI work, as well as EIP pathogens. Several MDH staff are very proficient in this work and would provide support to the fellow in developing and enhancing this skill set.

*Project #1 Objectives and Expected Deliverables:*

- Develop internal dashboards for HERDs program areas.
- Assist with transitioning current dashboards from Tableau to Power BI

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- Assist with reviewing current internal and external dashboards and enhancing them as needed (e.g., Annual Disease Control Newsletter for Reportable Diseases in MN, Wastewater surveillance, viral respiratory disease surveillance)

*Project #1 Impact:*

Data dashboards are used by external stakeholders to monitor disease trends, consider the need for interventions (e.g., hospitals use MDH data to decide when to require mask protocols in their facilities based on viral respiratory disease metrics), and to learn about disease patterns across the state and over time. Internal dashboards are used by staff to review data in real time, flag changes of concern, and identify the need for interventions. Interactive data dashboards have become an expected approach within MDH to assist epidemiologists and decision-makers to ensure needed public health interventions are properly implemented in a timely manner.

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

It is anticipated that there will be opportunities to participate in emergency responses to public health threats. The HERDs section has worked closely with the MDH Center for Emergency Preparedness and Response throughout the COVID-19 pandemic and continues to collaborate closely on COVID-19 and other responses, including Ebola travel monitoring, Marburg travel monitoring, multiple measles outbreaks, and the Lassa Fever response (Iowa case, Minnesota residents had potential lab exposures). Mentors provided leadership to the MDH response for COVID-19 and have done so since the beginning of the pandemic (winter 2020). Dr. Gyllstrom and Ms. Fell were leads in implementing Ebola and Marburg travel monitoring, as well as coordinating the Lassa Fever response with Iowa. There are also opportunities to participate in general preparedness activities, including bioterrorism preparedness. There is opportunity to work with bioterrorism preparedness staff and participate in the development of table-top exercises, as well as attend emergency preparedness workshops and/or conferences.

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

The HERDs section has several processes in place to identify, characterize and respond to potential COVID-19 clusters including the use of geocoded case data, whole genome sequencing and variant analysis, reporting from healthcare facilities (e.g., long-term care facilities, acute care hospitals), as well as regular review of surveillance data. We are particularly interested in examining how the pandemic affected areas of higher social vulnerability and/or are comprised of high priority population groups. This includes Black, Indigenous and people of color (BIPOC), as well as medically-underserved communities, and differences among rural and urban populations in Minnesota. HERDs staff include HIV epidemiologists who are skilled in molecular and time-space cluster detection and analysis. Finally, we will offer the opportunity to lead a foodborne or other outbreak investigation within another section of IDEPC. Depending on the opportunities, HERDs will prioritize the Fellow’s time to complete their competencies. Previous fellows have devoted 0.25-0.50 FTE to cluster and active outbreak investigations.