

Non-Infectious Diseases (Cross-Cutting), Infectious Diseases

ND Department of Health, Office of the State Epidemiologist

Bismarck, North Dakota

Assignment Description

The fellow will be located within the Office of the State Epidemiologist. This Office provides epidemiology, data analysis, and informatics support to all sections and divisions in the health department. This office reflects the new atmosphere of the department that recognized the need for a cross-cutting office with department-wide responsibilities. This office was established in July 2017.

Responsibilities of the Office include investigating or providing consultation on disease outbreaks; identifying and implementing various databases and surveillance systems; data stewardship, developing guidelines for data management, and supporting statewide epidemiologic infrastructure.

The Fellow be exposed to a wide variety of projects in applied public health epidemiology. The Fellow will be responsible for special analyses and projects, but involvement in other projects going on in the division will be strongly encouraged to assure exposure to communicable disease, chronic disease, maternal and child health, and emergency preparedness program activities. Projects will focus on program evaluation, surveillance, data acquisition, data analysis and report writing.

Day-to-Day Activities

This fellowship entails a variety of research, surveillance, and evaluation opportunities. These activities will involve close collaboration with agencies at the federal, state, and local level, private and non-profit organizations and academic institutions. The Office of the State Epidemiologist has access to numerous data sets, including but not limited to hospital discharge, prescription drug monitoring program, BRFSS, acute disease surveillance data, immunization registry data, injury, newborn screening and syndromic data. However, because we are a smaller health department, our capacity to conduct data analyses, research, surveillance, and evaluation beyond the necessary requirements is often hindered. The fellow can take a leadership role in carrying out these additional activities based on his/her interests, fellowship competency requirements, and agency needs.

While at the NDDoH, the fellow will be treated as any other newly hired epidemiologists and will be offered the same rights and privileges. Their day-to-day activities may include data collection, data analysis, database development, informatics determinations, reporting writing and education development. The Fellow will participate in weekly staff meetings and epidemiology workgroup monthly meetings. At these meetings, situational awareness, data needs and special projects are discussed. Additionally the fellow will be collaborating with external partners through in-person or virtual communication.

Potential Projects

Surveillance Electronic Reporting of Newborn Screening data Activity

The purpose is to improve surveillance and reporting of newborn screening results by the use of automated electronic laboratory reporting. Newborn screening is mandatory for all infants born in North Dakota (resident cohort of approximately 13,000) to identify certain genetic/metabolic disorders of body chemistry that may cause brain damage, disabilities or even death if not identified early. All out of range results are reported to the infant's primary care provider and the North Dakota Newborn Screening Program (NDNSP) within the North Dakota Department of Health (NDDoH).

Since 1992, the University of Iowa State Hygienic Laboratory (SHL) has processed all newborn screens for North Dakota. All presumptive positive screening results are posted to a secure portal site on the SHL web portal. Currently, the short-term follow-up staff log into the web portal and retrieve laboratory reports and fax a letter with recommendations to the primary care providers for confirmatory testing.

To increase efficiency and streamline this process, we propose to conduct a pilot project with one hospital to use electronic reporting from the SHL and have those reports submitted to the North Dakota Health Information Network (NDHIN) which could then route the laboratory reports to both the ordering provider and the NDNSP.

The Fellow would be responsible for initiating meetings, ensuring that actions items are completed, developing protocols and guidance, working with the NDNSP personnel, hospital personnel, and Information Technology personnel within the NDHIN and SHL. The Fellow would ultimately conduct quality control and quality improvement of this surveillance.

Surveillance Evaluate the effectiveness of the NDDoH Immunization Program recall Evaluation

The fellow will be responsible for evaluating the effectiveness of the NDDoH Immunization Program recall efforts on increasing adolescent immunization rates.

- a) Analyze how many times an adolescent received a recall notice prior to being vaccinated, what type of recall the adolescent received (i.e. phone call, postcard, letter) and how many adolescents received immunizations within 30 days of a recall event.
- b) Evaluate immunization rates for adolescents in the recall age group for dates prior to and after each recall event and compare adolescents included in recall and those being vaccinated after recall by sex and race.
- c) Evaluate where adolescents are receiving immunizations after recall based on type of provider administering the vaccine (i.e. private practice vs. public health) and identify

geographic areas (by county) in the state with the highest concentration of adolescents receiving recall notices based on the ZIP codes the recall notice was sent to.

The Fellow will be asked to summarize results from this project in a report and present their findings to the Immunization Program. Any gaps or concerns identified in the analysis will be used to update the immunization program's statewide policies and procedures as well as determine the return on investment.

Major Project Development of a Statewide Medical Marijuana Surveillance System

Development of a systematic, ongoing collection, management, analysis, and interpretation of Medical Marijuana data followed by the dissemination of the data to provide situational awareness and stimulate public health action.

Data collected and disseminated by the surveillance system will be used for public health action, program planning, and evaluation . This project will involve use of a variety of data sources such as claims data, hospital discharge, DOT, BRFSS, YRBS, PRAMS, etc.

The fellow will be working with the newly implemented division created in 2016 following the passing of the medical marijuana bill. This project will build the surveillance for this program from the ground up and be responsible for designing not only the data format and management, but will also plan and design the monthly and annual reports that will be used by the Division, the Department and Legislation.

**Additional Analysis of North Dakota PRAMS data
Project**

The North Dakota Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based surveillance project initiated by the Centers for Disease Control and Prevention (CDC) and NDDoH. In North Dakota, one epidemiologist is responsible for not only the programmatic duties of PRAMS but is also responsible for the analysis. The fellow will assist the epidemiologist with PRAMS data analysis. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. This is only the second time North Dakota has collected PRAMS information. The current project started data collection in 2016, but North Dakota did a point-in-time study in 2002.

**Additional Data analysis and reporting using NHSN
Project**

The NDDoH has access to National Healthcare Safety Network (NHSN) data for North Dakota hospitals and some skilled nursing facilities. This data can be used to identify facilities with high infection rates and to identify areas that could benefit from state-wide and/or local prevention activities. This position will assist the NDDoH Healthcare Associated Infection (HAI) program with analyzing NHSN data to drive program priorities and other public health interventions. This position will work with other programs such as the Immunization program on healthcare worker influenza vaccination

promotion and improvement by using data available in NHSN. The NDDoH has a partnership with a local university to advance Antibiotic Stewardship programs and Antibiotic Resistance prevention in the state. This position will work with these university partners by analyzing antibiotic stewardship program, antibiotic use, and antibiotic resistance data modules in NHSN to develop reports to be used for program improvement.

Preparedness Role

North Dakota has an established Emergency Preparedness and Response Section. The Fellow would have many opportunities to participate in trainings, tabletop exercises, discussions and projects with this Section. Among these would be:

Incident Command Training:

The availability and completion of Incident Command System training for better integration with the National Incident Management System structure.

Plan writing:

Work with the EPR section to update current plans and draft the plans that are still needed.

Table Top Exercise:

Work with both the EPR section and the Division of Disease Control to develop an infectious disease table top, based on a large scale natural outbreak (such as measles, TB, mumps or hepatitis)

Additional Activities

Opportunities will also exist for the Fellow to work on projects with other divisions. Within the Division of Disease Control there may be opportunities to work with staff on the surveillance and investigation of enteric disease outbreaks, help with rabies follow-up, or conducting testing at HIV/HCV testing events. In addition, there may also be opportunities to work with the Oral Health program, Suicide Prevention, and help with the data collection for the National Violent Death Registry.

It is the goal of the NDDoH to offer a wide variety of practical experiences in an effort to showcase the vastness of public health and provide opportunities to contribute to projects related to the Fellow's interests and career goals. Additionally, it will be expected that fellow will provide presentations, and submit abstracts to conferences and peer-reviewed publications.

Mentors

Primary

Tracy Miller PhD, MPH

State Epidemiologist

Secondary

Molly Howell MPH

Disease Control Assistant Director/Immunization Program Manager