

Infectious Diseases

Nebraska Department of Health and Human Services, Division of Public Health

Lincoln, Nebraska

Assignment Description

Because of the tremendous public health and medical benefits of vaccines, every state health department has created a functioning immunization registry that healthcare providers can reference for making appropriate immunization recommendations. As these registries have evolved and become more robust, vaccination coverage estimates and other public health related questions can now be investigated using this large source of vaccine data. For instance, it can provide epidemiological value for identifying geographic areas that are at risk for VPD outbreaks, as well as directing other prevention and disease reduction strategies. Nebraska public health officials have recently prioritized the utilization of vaccine information, but to date, there has not been a designated individual to undertake such projects with guidance from the State Epidemiologist and other health officials.

The Fellow will work as part of a multidisciplinary team that is located within the Division of Public Health of the Nebraska Department of Health and Human Services. The training and skill development of the Fellow will be the primary responsibility of the State Epidemiologist with assistance from many others, notably the Unit administrator and VPD epidemiologist. All epidemiology team members will be at the disposal of the Fellow to provide expertise in selected aspects of epidemiology and programmatic activities. The Fellow will be authorized to access and analyze data sets/surveillance systems in all of the relevant program areas.

In collaboration with the State Epidemiologist, Unit Administrator, VPD epidemiologist, NESIIS coordinator, and Immunizations program manager, the Fellow will work towards utilizing the NESIIS database to statistically analyze data that answers vaccine coverage related questions. There has been preemptive work started in 2017 that included simple coverage estimates for youth cohorts according to the ACIP schedule. The data has also been sent to CDC as part of their Trends in Immunization Practices System (IIS-TIPS). This project aims to sample the vaccine registry data in a similar fashion as the National Immunization Survey (NIS) and compares the resulting coverage estimates to NIS estimates. The IIS-TIPS project is still being analyzed by the CDC and we have become aware of similar opportunities for collaborations with the CDC and other states going forward.

Day-to-Day Activities

1) Develop an understanding of and familiarity with NESIIS datasets; 2) Refine data processing and data analysis skills using SAS; 3) Analyze and interpret data; 4) Prepare epidemiology reports; 5) Facilitate further study questions in conjunction with epidemiologists, Immunization staff, and CDC; and 6) Coordinate with IIS workgroups at the local, state, and federal level in order to learn and apply common standards consistently.

Potential Projects

Surveillance Vaccine-preventable disease surveillance activities Activity

Related priority areas include coordination of Vaccine-preventable disease (VPD) surveillance using the National Notifiable Disease Surveillance System (NNDSS). There are disease surveillance capacities within NESIIS which could be explored as supplementing the data collected in NEDSS, such as case count for Varicella and other VPDs that are recorded for immunity within the IIS system. It is also a future ideal that these two systems be enhanced in order to directly exchange electronic data files for improved surveillance capacity. If the Fellow develops an interest in Informatics, they could take part in such future projects as surveillance system integration.

Surveillance Hepatitis B surveillance evaluation Evaluation

Hepatitis B is a fairly common VPD in Nebraska. DHHS conducts case based surveillance for all laboratory confirmed cases in collaboration with the 20 local health departments across the state. However, aside from acute cases, pregnant women, and clients in dialysis centers, there is not a lot of follow-up that is performed. An opportunity for evaluation exists in how cases are identified, followed-up, and documented in the National Notifiable Disease Surveillance System (NNDSS) and how these surveillance processes can be improved and standardized.

Major Project IIS analysis projects

The primary project for the Fellow is to assess the epidemiology of vaccine coverage rates across the state and to identify gaps and areas where interventions should be focused. This information would be useful both during outbreaks of VPDs, as well as for Immunizations programmatic decision making.

There are a number of additional opportunities for utilizing the vaccine registry for public health purposes and the CSTE Fellow would be the point person for managing a variety of projects with both internal and external stakeholders, such as CDC and the American Immunization Registry Association (AIRA).

As an expert within the NESIIS database, the Fellow would also be positioned to identify and provide consultation for improving data quality standards to the NESIIS team and tracking the progress of improving electronic reporting from healthcare providers.

It was our ambition to take part in the CDC's IIS Sentinel Site project in 2018, which provides support to select Immunization Information Systems (IIS) for program evaluation and vaccine use assessments. Selected Sentinel Sites closely partner with CDC NCIRD to track patterns in immunization practices and assess vaccination coverage among children less than 19 years of age in their geographic regions. Due to a likely reduction in available federal funds, the opportunities for additional states to partake is unlikely. However, we have worked with the IIS officials at CDC and

there will be other opportunities to collaborate regardless of our direct participation in the Sentinel Site project. The Fellow would be charged with maintaining these working relationships and enhancing the information gleaned from multiple analysis projects.

Additional Project Outbreak response

The Fellow could also be utilized as appropriate to enhance capacity during various outbreaks. Each program area at DHHS has an epidemiology surveillance coordinator to manage infectious disease surveillance. However, there is often sharing of time and resources amongst the staff when significant outbreaks occur. For instance, in the past year there were outbreak responses for the following vaccine-preventable diseases that required additional assistance to the VPD epidemiologist within the department; Mumps, Hepatitis A, Varicella, and Measles.

Additional Project Evidence-based vaccination advocacy efforts

In addition to the projects above and other projects that will stem from them, the Fellow would have an opportunity to contribute towards education and advocacy efforts that promote the benefits of immunizations through the Nebraska Immunization Advisory Committee and other groups that the Office of Epidemiology supports.

Preparedness Role

The fellow will assist in the response to acute and emergent problems as it relates to his/her duties, including emergency response activities related to disease outbreaks. This could include sub-populations analysis to identify actual pockets of need using local area coverage assessment analyses to determine when further public health action is needed. Nebraska's Bioterrorism Preparedness Program offers training and exercises to ensure Nebraska's preparedness in the event of such an incident. The fellow can access this training and participate in such exercises as needed.

Additional Activities

Additional opportunities will be available and dependent on the specific interests of the applicant and the capacity needs of future projects.

Mentors

Primary

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