

**ID: 44274722**

**Maternal and Child Health - Host Site Description**  
**Nebraska Department of Health and Human Services**

**Assignment Location:** Lincoln, US-NE  
Nebraska Department of Health and Human Services  
Division of Public Health

**Primary Mentor:** Erika Fuchs, PhD, MPH  
Epidemiologist  
Centers for Disease Control and Prevention/Nebraska Department of Health and Human Services

**Secondary Mentor:** Celeste Illian, MPH  
Epidemiology Surveillance Coordinator  
Nebraska Department of Health and Human Services

**Work Environment**

Hybrid

**Assignment Description**

The Applied Epidemiology Fellow will support the Office of Maternal and Child Health Epidemiology (The Office) in its efforts to decrease maternal mortality in the state by conducting surveillance, case reviews, and evaluation. Specific projects will include planning and conducting data analyses and evaluating a surveillance system. The fellow will also support The Office's emergency preparedness planning and participate in an outbreak investigation.

This fellowship will focus on maternal mortality surveillance. The fellow will have the opportunity to conduct surveillance on pregnancy associated mortality, evaluate the maternal mortality surveillance system, and complete an analysis on Severe Maternal Mortality (SMM).

The fellow will work closely with the primary and secondary mentor to develop a workplan for each of the primary project areas. The fellow will conduct data analyses using software such as SAS/Stata/R, conduct literature reviews, write and edit reports, and present their work in internal and external meetings. There will be other opportunities for the fellow to network with and learn from other internal and external subject matter experts and epidemiologists during their fellowship.

The fellow will be integrated into DPH by engaging in projects and activities with internal staff and external partners and attending and actively participating in quarterly Maternal Mortality Review Committee (MMRC) meetings, biweekly Office meetings, monthly epidemiology meetings, monthly public health leadership fireside chats, and weekly meetings with primary and secondary mentors. As a funded, Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE-MM) state, the fellow will also have opportunities to learn from other jurisdictions and the Centers for Disease Control and Prevention (CDC) by attending monthly meetings with the maternal mortality team and CDC Project Officer, Maternal Mortality Review Information Application (MMRIA) Abstractor and Coordinator Office Hours, and MMRIA Data Analyst Office Hours.

The Office is responsible for epidemiology, data analysis, and MCH data systems within the DPH. The Office is embedded within Lifespan Health Services Unit, alongside the MCH programs, and has been developed to support Nebraska's Title V programs and stakeholders over the past 22 years.

The workforce and capacity have grown over time and is currently in a capacity building phase. The Office has ten full time equivalents (FTE) and two contracted FTE.

**ID: 44274722**

**Maternal and Child Health - Host Site Description**  
**Nebraska Department of Health and Human Services**

The Office consists of the State Systems Development Initiative (SSDI), Title V Needs Assessment and support, the Child and Maternal Death Review Teams (CMDRT), Nebraska Pregnancy Risk Assessment Monitoring System (PRAMS), Nebraska's Maternal Infant and Early Childhood Home Visiting (MIECHV) performance management and data system, the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET), and the Birth Defects Registry.

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

Primary and secondary mentors will provide extensive statistical and data analysis support. Additional technical assistance specifically related to maternal mortality is available through the CDC. External training opportunities can be identified as needed for the fellow to complete necessary tasks. Available software for data analysis and other daily tasks includes SAS, Stata, R, Tableau, and Microsoft Office Suite. Other software may be available upon request. Databases and surveillance systems available for the fellow include the MMRIA data system, vital records (including birth certificate, death certificate, and fetal death certificate data), Hospital Discharge Data (HDD), Pregnancy Risk Assessment Monitoring System (PRAMS), Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET), and other surveillance systems as needed to complete the fellow's work.

**Projects**

**Surveillance Activity Title: Analyze Nebraska Maternal Mortality Review Committee Data**

*Surveillance Activity Description:*

The Maternal Mortality Review Committee (MMRC) is the primary source for maternal mortality data in Nebraska. In 2021, the first data analysis and report from the MMRC was released which analyzed pregnancy-associated data to provide information on the pregnancy-associated mortality ratio; pregnancy-related mortality ratio; counts; causes; distribution of deaths by age, race, rurality, and primary payer source; contributing factors; and opportunities for prevention. The surveillance activity proposed would enhance the initial data analysis and reporting to specifically focus on pregnancy-related deaths and stratify results by disproportionately impacted populations.

While all pregnant and postpartum Nebraskans are at risk of experiencing severe maternal morbidity or mortality, there are subpopulations disproportionately affected by pregnancy-related complications, including death. In Nebraska, maternal mortality risk differences based on race or ethnicity, which are known to have significant differences nationwide, have not been thoroughly studied successfully due to small numbers; for example, in the last report which included data for five years of maternal death reviews, the Pregnancy Associated Mortality Ratio (PAMR) among white birthing people did not differ significantly from the PAMR of all other races. One reason a statistically significant difference may not have been found is because persons of all races other than white were combined into one category due to small numbers. In conjunction with CDC's small number analysis technical support, the fellow will complete small number analysis to further analyze differences in maternal outcomes by race and ethnicity.

Furthermore, Nebraska is a highly rural state. Known differences in access to care, availability of specialty medical providers, social support, and maternal outcomes exist between rural and urban areas. Nebraska MMRC understands the need to analyze potential disparities in maternal health outcomes based on geographic location. Other health disparities that require attention include socioeconomic status differences and insurance provider type. Maternal outcomes among birthing people by socioeconomic status and insurance providers will be analyzed by the fellow.

*Surveillance Activity Objectives:*

- Contribute to the MMRC annual report
- Prepare a data analysis plan and SAS (or similar statistical software) code

**ID: 44274722**

**Maternal and Child Health - Host Site Description**  
**Nebraska Department of Health and Human Services**

- Present the methods and results of analyses to the MMRC and Child Death Review Team (CDRT)

*Surveillance Activity Impact:*

Surveillance of maternal mortality focused specifically on pregnancy-related deaths and stratifying by disproportionately impacted populations will enhance statewide understanding of preventable maternal deaths, including improving recommendations for action to reduce future morbidity and mortality.

**Surveillance System Evaluation Title: Evaluate Nebraska's Maternal Mortality Review Information Application Data**

*Surveillance System Evaluation Description:*

The proposed surveillance evaluation project is utilization of the Centers for Disease Control and Prevention (CDC) Data Quality Report (DQR) for MMRIA maternal mortality data on a quarterly basis to improve data quality. The fellow will review the CDC's Updated Guidelines for Evaluating Public Health Surveillance Systems, use the standards from the Guidelines to evaluate Nebraska's instance of MMRIA system data, develop a standardized process to utilize the reports generated by CDC, and track the number of identified data quality issues investigated and improvements identified on a quarterly basis.

*Surveillance System Objectives:*

- Contribute to the MMRC annual report
- Prepare a data analysis plan and SAS (or similar statistical software) code
- Present the methods and results of analyses to the MMRC and Child Death Review Team (CDRT)

*Surveillance System Impact:*

Evaluating the primary source of maternal mortality data in the state, developing systematic improvements for that surveillance system, and refining the future utilization of the surveillance system will improve the quality of data used in analyses to understand the breadth and scope of maternal mortality in Nebraska.

**Major Project Title: Identify Risk Factors for Severe Maternal Morbidity**

*Major Project Description:*

Nebraska is very interested in incorporating surveillance of severe maternal morbidity (SMM) into efforts to improve maternal outcomes. With a small population and relatively small number of maternal deaths per year, SMM surveillance provides additional context surrounding maternal morbidity and mortality. In 2022, The Office participated in a project to link PRAMS data with hospital discharge data (HDD) to explore SMM. The outcome of that project included a preliminary data analysis examining top causes of SMM by race and ethnicity.

Since individual case reviews of SMM are not feasible in the state, data linkage projects like the one described above provide a rich source of information on maternal experiences in the perinatal period. Using the CDC's definition of SMM, which includes a list of 21 indicators, the fellow will use the linked data to help identify clinical and non-clinical risk factors for SMM in Nebraska. Additionally, the fellow will explore options for additional analyses and complete a data quality assessment of the linked dataset to the individual datasets.

*Major Project Objectives:*

- Conduct a literature review
- Create an analysis plan and SAS (or similar statistical software) code
- Create a Standard Operating Procedure to document SMM surveillance activities
- Write a written report or develop a dashboard with results and the interpretation of data analyses

**ID: 44274722**

**Maternal and Child Health - Host Site Description**  
**Nebraska Department of Health and Human Services**

*Major Project Impact:*

Identification of risk factors for SMM will aid in development of recommendations to mitigate SMM in the state. Recommendations are implemented at the clinical, community, and systems levels.

**Additional Project #1 Title: Participate in Emergency Preparedness in Maternal and Child Health Efforts**  
**Project #1 Type: Major Project**

*Project #1 Description:*

The fellow will have the opportunity to be involved in Nebraska's MCH emergency preparedness and response efforts. Nebraska is currently undertaking efforts to implement the Association of Maternal and Child Health Programs (AMCHP) Public Health Emergency Preparedness and Response Checklist for Maternal and Infant Health. Examples of potential activities include identifying facilitators and barriers to collecting timely, actionable data about MCH populations, reviewing and updating sections of the state emergency plans that are specific to MCH populations, and preparing an internal report that describes high-risk MCH populations. The fellow may also review communication plans for dissemination of preparedness messages to MCH populations or collect information on and update contingency plans for newborn screening, registering vital events, or coordination of WIC services during emergencies.

*Project #1 Objectives and Expected Deliverables:*

- A brief report on facilitators and barriers to collecting data
- Updated MCH-relevant state emergency and contingency plans
- Internal report describing high-risk MCH populations
- Present updated communication plans to internal stakeholders

*Project #1 Impact:*

The state will have improved emergency preparedness plans relevant to MCH populations, especially those at risk of disproportionately negative effects.

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

The fellow will have the opportunity to be involved in Nebraska's MCH emergency preparedness and response efforts. Nebraska is currently undertaking efforts to implement the Association of Maternal and Child Health Programs (AMCHP) Public Health Emergency Preparedness and Response Checklist for Maternal and Infant Health. Examples of potential activities include assessing the preparedness needs among mothers, infants, and children in the state, reviewing communication plans for dissemination of preparedness messages to MCH populations, or collecting information on and updating contingency plans for newborn screening, registering vital events, or coordination of WIC services during emergencies. The time allocated to this activity will be approximately 0.2 full-time equivalent (FTE).

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

The fellow will have the opportunity to be involved in cluster or outbreak investigations. Some of the activities the fellow could participate in include helping establish a case definition, finding cases, recording information on the cases and exposures, and developing hypotheses about the source of the exposure. DHHS assists local jurisdictions in conducting outbreak investigations depending on scope and pathogen type. Typical outbreaks that require assistance by the state include childcare or school outbreaks of norovirus, salmonella outbreaks, and long-term care or hospital-associated respiratory illnesses, among others. The time allocated to this activity will be approximately 0.05 FTE.

**ID: 44274722**

**Maternal and Child Health - Host Site Description  
Nebraska Department of Health and Human Services**

**Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation**

The fellow will have the opportunity to work with data from Nebraska's Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) COVID-19 module. Nebraska is currently conducting data collection and follow-up for people who tested positive for COVID-19 during pregnancy. The fellow could participate in follow-up on included individuals by abstracting medical records or conducting data linkages, recoding data in SAS for upload into REDCap, or conducting descriptive statistics using the data. The fellow may also participate in writing the first state report using Nebraska SET-NET data. The time allocated to this activity will be approximately 0.05-0.10 FTE.

**Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work**

DHHS's Office of MCH Epidemiology is committed to ensuring health equity is at the forefront in all areas of data collection, reporting, and use. The fellow will have the opportunity to incorporate health equity principles in potential projects from data collection (for instance, assessing missingness by race) to dissemination, to the development of culturally appropriate recommendations. The fellow will also have opportunities to work with staff from the DHHS Office of Health Disparities and Health Equity in an ongoing collaboration with Nebraska SET-NET. Other trainings and opportunities may be available as desired by or appropriate for the completion of the fellow's work.