

ID: 73783970

Maternal and Child Health, Chronic Disease - Host Site Description

Maine Center for Disease Control and Prevention

Assignment Location: Augusta, US-ME
Maine Center for Disease Control and Prevention
Division of Disease Prevention

Primary Mentor: Fleur Hopper, MSW, MPH
Senior Maternal and Child Health Epidemiologist
Maine Center for Disease Control and Prevention

Secondary Mentor: Sara Huston, PhD
Senior Chronic Disease Epidemiologist
Maine Center for Disease Control and Prevention

Work Environment

Hybrid

Assignment Description

Maine's CSTE fellowship provides a unique opportunity for fellows to gain experience in maternal and child health and chronic disease epidemiology. The Division of Disease Prevention in the Maine Center for Disease Control and Prevention is committed to providing an exceptional, well-rounded experience for a CSTE/CDC Applied Epidemiology Fellow. The Division is a national leader in maternal and child health and chronic disease prevention. Programmatic areas within the Division include Maternal and Child Health; Children with Special Health Needs; Women's Health; Home Visiting; Oral Health; Physical Activity; Nutrition; Obesity; Tobacco; Substance Abuse Prevention; Injury and Suicide Prevention; Adolescent and School Health; Community-based Prevention; Asthma; Diabetes, Heart Disease, and Stroke; Comprehensive Cancer and the Maine Cancer Registry. This assignment will allow a Fellow to develop applied epidemiology competencies under the guidance of two experienced mentors (both have mentored past Applied Epidemiology Fellows and one is an EIS alumna) by engaging in both narrowly-focused and cross-cutting projects in maternal and child health and chronic disease epidemiology, with additional opportunities to gain experience in injury prevention, tobacco and substance use, and environmental health, depending upon the Fellow's interests. Both mentors have many years of experience in applied epidemiology, have enjoyed mentoring many graduate students and fellows, and are committed to ensuring an exceptional experience for an Applied Epidemiology Fellow. The Maine CDC includes many innovative public health programs and an excellent staff of epidemiologists, providing the Fellow with many opportunities to learn and contribute.

The fellow's day-to-day activities will depend upon the particular projects being worked on at a given time, but will include creating data analysis plans; analyzing surveillance data (mortality, births, survey data, hospital discharge, emergency department, etc.); interpreting data and creating tables, charts, and narrative for program staff use; preparing recommendations for partners based on the data; handling requests for data and technical assistance from Maine CDC staff, partners, local public health staff, and the public; preparing and delivering presentations to Maine CDC staff and local, state, and national meetings; being involved in program planning; meeting with Maine CDC staff to better understand the organization and its public health programs; participating in regular team meetings, programmatic staff meetings as appropriate, and division-wide staff meetings; designing and implementing an evaluation of a surveillance system; working with Division of Disease Prevention program staff to help them understand, interpret, and use relevant data; preparing brief fact sheets for program use; preparing manuscripts for publication; attending webinars, conference calls, and conferences to increase skills and knowledge; reading and doing internet and library research to keep up to date and increase public health knowledge. Our epidemiology team has also increased our learning related to health equity and how to better present data with a health equity perspective. As a team, we attend trainings or watch

ID: 73783970

Maternal and Child Health, Chronic Disease - Host Site Description
Maine Center for Disease Control and Prevention

webinars on this topic and work collaboratively with Maine's Office of Population Health Equity to improve how we do our work. Our CSTE fellow would be included in these trainings and conversations.

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

The fellow will have access to the following surveillance data and other databases: vital records (births and deaths), hospitalization data, emergency department data, syndromic surveillance data, Behavioral Risk Factor Surveillance System (BRFSS) data, the Maine Integrated Youth Health Survey (MIYHS) data, the Maine Cancer Registry data, the Pregnancy Risk Assessment and Monitoring System (PRAMS) data, the Maine Violent Death Reporting System (NVDRS), the Maternal Mortality Review Information Application (MMRIA). The fellow will also have access to the following linked data systems: Maine's home visiting data linked with birth certificate data, and Maine's new Newborn Screening Data System that includes linked infant death, birth, newborn hearing, newborn bloodspot, and birth defects data.

Analytic support will be provided by members of the DDP epidemiology team and from survey/database coordinators, most of whom are located within the Maine CDC Data, Research, and Vital Statistics Program. SAS statistical software and ArcGIS software will be provided; Joinpoint, R, and Tableau will also be provided as needed.

Mentors are experienced in training new staff in the use of SAS, including SAS Survey Procs for analysis of complex sample survey data such as PRAMS, BRFSS, and MIYHS, and in assisting new staff who have experience in other statistical packages transition to using SAS. The DDP epidemiology team includes staff who are highly skilled in the use of SAS and can assist in helping the Fellow develop their analytic and SAS programming skills. One team DDP epidemiology is also highly skilled in R, and able to provide technical assistance to R users if needed. Maine's Office of Information Technology provides prompt and capable IT support to all staff, including Fellows.

Projects

Surveillance Activity Title: Social Determinants of Health (SDOH) BRFSS Analysis

Surveillance Activity Description:

Surveillance Activity Description: In 2022 and 2023, Maine added the Social Determinants of Health (SDOH) Optional Module to Maine's BRFSS and that data has recently become available but has not yet been analyzed. In the Fall of 2024, CDC staff reported that multiple SDOH were strongly associated with a variety of health conditions based on data from the 42 states, D.C. and territories that included the SDOH module in 2022 in the journal Preventing Chronic Disease. This project would involve analyzing Maine-specific data, aggregating across the 2 years and including additional chronic disease-related conditions and risk factors allowed by the Maine BRFSS.

Surveillance Activity Objectives:

Project objectives and expected deliverables: This project would involve using SAS or R to examine the relationship between SDOH measured in BRFSS (including mental stress, food insecurity, lack of reliable transportation, and more) and chronic disease-related health conditions and risk factors (tobacco, cancer survivorship, diabetes, obesity, etc). Depending on the interests of the fellow, the analysis could focus more narrowly on specific SDOH or conditions/risk factors. Analysis would include bivariate and multivariable analyses, using survey weights and accounting for the complex sample design. Expected deliverables would include a set of result tables, a data brief or infographic (1-2 pages). An abstract submission and presentation or poster at a national conference such as CSTE, or a manuscript suitable for journal submission would also be options if the fellow had interest.

ID: 73783970

Maternal and Child Health, Chronic Disease - Host Site Description

Maine Center for Disease Control and Prevention

Surveillance Activity Impact:

Describe the expected public health impact to be achieved from this project/activity: The findings from this analysis will be extremely helpful to our Maine chronic disease programs, who have been working hard to find additional ways to understand the impact of SDOH on chronic diseases and how they can address those through their interventions. The findings will also impact our future surveillance system decisions on whether and when to continue adding the SDOH module to the BRFSS on a regular basis and how to incorporate the resulting SDOH data into our routine data interpretation and dissemination processes.

Surveillance System Evaluation Title: Evaluation of Maine's Substance Exposed Infant Surveillance System

Surveillance System Evaluation Description:

In-utero substance exposure is associated with several short- and long-term health risks for infants, including low birth weight, breathing and feeding difficulties, and developmental challenges such as learning difficulties. Despite significant declines in recent years, Maine continues to have among the highest rates of newborns with neonatal abstinence syndrome in the US. The prevalence of in-utero exposure to illicit substances other than opioids among Maine's newborns is currently unclear. This project would involve the valuation of sources of substance-exposed infant information (birth certificates, hospital discharge records, child welfare notifications, Medicaid data, and medical records) to determine the most accurate sources for case ascertainment of substance-exposed infants to inform Maine's prevention and planning efforts.

Surveillance System Objectives:

The purpose of this project is to review sources of infant substance exposure information and determine how these sources can be triangulated to optimize case ascertainment of substance-exposed infants. Results from this evaluation will be summarized in a report and presented to Maine's Substance Exposed Infant and Maternal Substance Use Steering Committee and the Maine Perinatal Systems Working Group. Findings could also be submitted to national conferences, including CSTE, CityMatCH, and/or the annual Association of Maternal and Child Health Programs conference.

Surveillance System Impact:

The results from these analyses will help inform the work of Maine's Substance Exposed Infant and Maternal Substance Use Steering Committee and other relevant work groups by determining the best methods for case ascertainment. This could result in changes to Maine's current substance-exposed infant surveillance system.

Major Project Title: Birth outcomes and delivery complications among birthing people with perinatal mental health conditions

Major Project Description:

Perinatal mental health is a priority area for Maine's Title V MCH Block Grant and for Maine's Perinatal Quality Collaborative (PQC4ME). This project involves using hospital discharge data to examine the association between perinatal mental health conditions, maternal morbidities, and birth outcomes in greater depth. Specifically, the Fellow would examine different types of perinatal health conditions, and assess the relationship between these conditions and key maternal morbidities, birth outcomes, and demographic factors. The analysis may also examine how perinatal mental health conditions contribute to hospital length of stay as well as potential follow-up hospitalizations.

Major Project Objectives:

Maine is currently analyzing hospital discharge data to examine overall severe maternal morbidity and perinatal mental health conditions, but these analyses would allow for a greater understanding of maternal health mental conditions and the potential outcomes associated with these conditions. The expected deliverables would be a data brief on the

ID: 73783970

Maternal and Child Health, Chronic Disease - Host Site Description

Maine Center for Disease Control and Prevention

findings and a presentation to the PQC4ME and hospitals participating in Maine's AIM Perinatal Mental Health Conditions Safety Bundle initiative. Findings could also be submitted to national conferences, including CSTE, CityMatCH, and/or the annual Association of Maternal and Child Health Programs conference.

Major Project Impact:

These analyses will provide partners, Maine CDC staff, and hospitals with additional information related to different types of perinatal mental health conditions, associated risks, and outcomes, and which conditions most often result in longer hospital stays or re-admission to the hospital.

Additional Project #1 Title: Adverse Childhood Events (ACEs) Across the Lifespan

Project #1 Type: Major Project

Project #1 Description:

This project involves analyzing data from Maine's newly reinstituted BRFSS ACEs module, data from the ACEs module on Maine's PRAMS survey, and ACEs data from the Maine Integrated Youth Health Survey. The report will include assessing the prevalence of ACEs across the lifespan and among specific population groups and examining the risk and protective factors associated with ACEs at different stages of the lifespan. While MIYHS ACEs data has been previously analyzed by the DDP Epi team, 2025 is the first year in which Maine will have ACEs data from all three of its key population-based surveys available simultaneously, allowing for a lifespan approach. Analyses will be conducted throughout the fellowship period culminating in a comprehensive report.

Project #1 Objectives and Expected Deliverables:

This project is designed to provide a comprehensive understanding of ACEs across the lifespan. The expected deliverables are a report for partners as well as presentations with report highlights for partner groups such as the Maternal Health Task Force, the Perinatal Systems of Care Steering Committee, and the MIYHS Steering Committee. Findings could also be submitted to national conferences, including CSTE, CityMatCH, and/or the annual Association of Maternal and Child Health Programs conference.

Project #1 Impact:

This report will be the first comprehensive report focused on ACEs across the lifespan. Results from the analyses will inform the work of Maine's Title V program, the Adolescent Health and Injury Program, and the ACEs Prevention Team.

Additional Project #2 Title: Capture-recapture analysis of case ascertainment for select birth defects for Maine Birth Defects Program (MBDP)

Project #2 Type: Surveillance System Evaluation

Project #2 Description:

The MBDP is currently working to identify the most appropriate data sources for case ascertainment of birth defects in the state. This project would utilize capture-recapture techniques to estimate the number of cases missed by the various reporting sources (i.e., vital records, hospital discharge, prenatal reports, case reports) using multiple years of data.

Project #2 Objectives and Expected Deliverables:

The objectives of this project are to determine the percentage of cases identified via each reporting source, estimate what percentage of cases are captured in the current surveillance system, and produce prevalence estimates after adjusting for under-case ascertainment. The expected deliverable is a report or one-pager for the MBDP.

ID: 73783970

Maternal and Child Health, Chronic Disease - Host Site Description

Maine Center for Disease Control and Prevention

Project #2 Impact:

Capture-recapture methods are commonly used by birth defect registries to determine accurate prevalence rates of birth defects. This technique was employed on a small-scale in Maine as part of a birth defects surveillance system evaluation about 20 years ago but has not been used since. The results of this analysis will provide updated information to MBDP about which data sources are most appropriate for case ascertainment and more accurate prevalence estimates for certain defects.

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

Fellows will participate in activities of the Public Health Emergency Preparedness Program. Some potential public health preparedness activities include attending PHEP trainings, participating in tabletop exercises, and estimating the number of pregnant people in Maine counties and public health districts to support emergency preparedness for the MCH population. We anticipate that these activities will account for <10% of the fellow's total work time, but this can be adjusted based on the fellow's interest.

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

Fellows will participate in the Infectious Disease morning call on a regular basis, shadow an infectious disease district epidemiologist, and participate in at least one outbreak or cancer cluster investigation with the assigned MECDC teams. We will work with current infectious disease staff, cancer registry staff, and the State Epidemiologist to ensure the fellow has opportunities to work in preparedness and on an outbreak. We anticipate that these activities will account for <10% of the fellow's total work time, but this can be adjusted based on the fellow's interest.