

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

Assignment Location: Madison, US-WI
Wisconsin Department of Health Services
Division of Public Health

Primary Mentor: Mark Wegner, MD, MPH
Chronic Disease Medical Advisor
Wisconsin Department of Health Services

Secondary Mentor: Mireille Perzan, MPH
Maternal and Child Health Epidemiologist & PRAMS Project Director
Wisconsin Department of Health Services

Work Environment

Hybrid

Assignment Description

Our CSTE AEF fellow will be hosted within the Bureau of Health Promotion at the Division of Public Health. Our fellow's chronic disease and maternal child health epidemiology and surveillance efforts will span the Chronic Disease Prevention and Cancer Control (CDPCC) Section and the Maternal Child Health (MCH) Program. In addition to regular check-ins with the Dr. Wegner and Ms. Perzan, we anticipate our fellow will work most closely on their major project, surveillance activities, and surveillance system evaluation day-to-day with our Bureau's staff of 17 epidemiologists, evaluators, and data staff specializing in chronic diseases, oral health, and maternal child health. Our fellow will primarily be responsible for data analysis, data visualization, and authorship of authoritative reports using PRAMS COVID-19 Vaccination data, Wisconsin's dental sealant registry, and the Wisconsin Healthy Smiles Survey. The CDPCC Section and MCH Program operate in a hybrid environment, so many virtual day-to-day communications around progress and training on these responsibilities will happen over Zoom, Teams, and Outlook.

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

- All epidemiologists, evaluators, and data staff in BCHP are available to serve as technical experts for software and surveillance data available to our incoming AEF fellow.
- Data analysis and statistical software: Tableau Desktop, ArcGIS (ArcMap and ArcGIS Online), SAS, Microsoft Office Suite
- Surveillance Systems and Databases: Wisconsin Vital Records Reporting and Analytic Database (VRAD), Wisconsin Hospital Discharge Datasets, Wisconsin Pregnancy Risk Assessment Monitoring System (PRAMS), Wisconsin's Dental Sealant Registry (DentaSeal), Wisconsin Healthy Smiles Survey, American Heart Association's Get with the Guidelines® (GWTG) Stroke Registry, and Wisconsin Immunization Registry (WIR)

Projects

Surveillance Activity Title: Wisconsin PRAMS COVID-19 Vaccination Report

Surveillance Activity Description:

Local and tribal health agencies, health systems, and academic institutions across Wisconsin have a vested interest in vaccination uptake, attitudes, and beliefs around the time of pregnancy. Our fellow will develop a working knowledge of

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

Wisconsin birth records, Wisconsin PRAMS, and Wisconsin Immunization Registry surveillance data, and produce a comprehensive report detailing:

- Birthing persons' views on and uptake of COVID-19 vaccination.
- Birthing persons' views on receiving COVID-19 vaccination during pregnancy and sources of vaccine information.
- Provider counseling efforts on vaccination.
- Concordance between vaccination status reported in Wisconsin PRAMS and the Wisconsin Immunization Registry.
- Analyses to assess COVID-19 hospitalizations of recently pregnant people using linked hospital discharge data.

Surveillance Activity Objectives:

Objectives:

- 1) Develop in-depth knowledge of the PRAMS surveillance system and the COVID-19 survey supplement.
- 2) Communicate MCH surveillance system findings to multiple audiences.

Deliverables:

- 1) Topical report on COVID-19 among recently pregnant individuals
- 2) Presentation to DPH staff on concordance between vaccination status in PRAMS compared to Wisconsin Immunization Registry

Surveillance Activity Impact:

This project will provide our agency with invaluable information on vaccination attitudes, beliefs, and sources of information. Results will guide improvements in future public health communications around vaccination and provide insight about current barriers to vaccination uptake for birthing persons and the general public in Wisconsin.

Surveillance System Evaluation Title: Evaluating Wisconsin's Dental Sealant Registry (DentaSeal)

Surveillance System Evaluation Description:

School-based oral health programs are an effective way for children to receive routine dental care. Wisconsin's school-based oral health program, Seal-A-Smile, contributes significantly to reductions of childhood tooth decay. Wisconsin's Seal-A-Smile program has grown dramatically since its inception, and the need for a standardized data collection system followed. In response, the Oral Health Program (OHP) and its partners developed a proprietary Sealant Registry, DentaSeal. Today, DentaSeal remains one of just a few Sealant Registries available in the United States and has garnered interest from other states as a prospective system for their own data collection purposes.

DentaSeal contains nearly 10 years of data and tracks a robust set of oral health indicators and patient demographics, yet no comprehensive evaluation has been undertaken since its inception - our fellow will have the opportunity lead the very first. After becoming familiar with the database's structure and capabilities, our fellow will be responsible for incorporating the CDC's framework for evaluating public health surveillance systems and produce a report of their findings. This process will require our fellow to engage DentaSeal's stakeholders, design an evaluation plan, assess the performance of DentaSeal, and share the findings of their evaluation. Additionally, our fellow will have the opportunity to use evaluation results to propose enhancements to the database's existing structure to improve data quality.

Surveillance System Objectives:

Objectives:

- 1) Review data quality of the information contained in DentaSeal.
- 2) Gain public health registry and database management experience.
- 3) Conduct a comprehensive assessment of DentaSeal using the CDC's framework for evaluating public health surveillance systems.

ID: 46356210

**Chronic Disease, Maternal and Child Health - Host Site Description
Wisconsin Department of Health Services**

4) Communicate DentaSeal evaluation findings to multiple audiences.

Deliverables:

- 1) Comprehensive report outlining the results of the DentaSeal evaluation.
- 2) Proposed enhancements to DentaSeal's database structure.

Surveillance System Impact:

DentaSeal is one of a few sealant registries in the country and serves as a use case for how other states can model their own registries. The database houses robust data on each child participating in a Seal-a-Smile program. This information allows the Division of Public Health to continually assess and monitor the state of Wisconsin children's oral health from the statewide, regional, and county-level perspectives. Ultimately, these data can inform and modify existing program activities to meet different communities' needs, but they should be based on accurate data. A comprehensive evaluation of DentaSeal will help ensure programmatic adjustments are reflective of the needs of the communities we serve, and, eventually, have downstream positive impacts on children's oral health.

Major Project Title: Wisconsin Healthy Smiles Survey of Ninth Grade Students

Major Project Description:

The Wisconsin Healthy Smiles Survey is considered a Basic Screening Survey (BSS). The BSS was developed by the Association of State and Territorial Dental Directors for oral health data to be collected in a standardized, efficient, and inexpensive way. The Wisconsin Oral Health Program implemented its first BSS during the 2001-2002 school year. The survey remains a pillar of the Wisconsin Oral Health Surveillance System.

This major project provides our fellow the opportunity to apply the breadth of their epidemiological training and gain direct experience with survey development, complex sampling methodology, database management, as well as data collection, linkage, and analysis. Data collection is performed by dental professionals who assess oral health disease burden during scheduled site visits. Dental professionals then submit their data to a secure database our fellow will manage. Our fellow will be involved in every step of administering the Wisconsin Healthy Smiles Survey, from planning to implementation to analysis phases. This project offers constant collaboration with other Oral Health Program team members and additional opportunities for professional growth.

Major Project Objectives:

Objectives:

- 1) Design and implement a complex sampling scheme to derive a set of schools that is representative of Wisconsin's ninth grade students.
- 2) Assist in survey development.
- 3) Oversee the data collection process, which will include oral health indicators and participant demographics.
- 4) Assist the Oral Health Epidemiologist in survey data analysis.
- 5) Develop post-survey report to share with internal and external partners.

Expected deliverables:

- 1) Comprehensive Wisconsin Healthy Smiles Survey report.
- 2) Wisconsin Healthy Smiles Survey infographics.

Major Project Impact:

Poor oral health is a significant contributor to childhood morbidity as dental caries are one of the most common chronic conditions experienced during childhood in the United States. Poor oral health during childhood can have long-term impacts on the development of chronic conditions later in life, such as heart disease. The Wisconsin Healthy Smiles

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

Survey of Ninth Grade Students provides important information on the current landscape of oral health among adolescents. These data are paramount in helping the state and community partners strategize how best to deliver care to Wisconsin communities in need.

Additional Project #1 Title: Cardiovascular and Stroke-related Hospital Events Interactive Dashboard

Project #1 Type: Major Project

Project #1 Description:

Hospitalization data are one of the most important sources to monitor cardiovascular disease and stroke burden at a local and state-level. Unfortunately, up-to-date hospital data are not easily accessible to public health staff or the public. Our fellow will have the opportunity to develop intimate knowledge of hospitalization discharge data and produce cardiovascular disease and stroke-related hospitalization measures using SAS and Tableau.

Project #1 Objectives and Expected Deliverables:

Objectives:

- 1) Develop in-depth knowledge of hospitalization discharge datasets.
- 2) Identify and select important measures of cardiovascular and stroke-related hospital events.
- 3) Write SAS code to analyze selected measures.
- 4) Develop familiarity with data visualization best practices and Tableau software.
- 5) Utilize Tableau software to create internal dashboards, with an optional public-facing dashboard.

Expected deliverables:

- 1) Internal Tableau dashboard detailing cardiovascular disease and stroke-related hospitalization measures.
- 2) Public-facing Tableau dashboard (optional) for publication on the Wisconsin Department of Health Services website.
- 3) SAS documentation of analyses produced and written procedure for replicating Tableau dashboards developed.

Project #1 Impact:

Cardiovascular diseases and stroke are some of the most common causes of hospitalization and death in Wisconsin. Complications from these conditions have been associated with increased risk of incident events following COVID-19 infection. This project documents the historical trends in cardiovascular disease stroke and hospitalization burden through present day in Wisconsin.

Additional Project #2 Title: Enhancing Wisconsin's Stroke Surveillance System through Data Linkage

Project #2 Type: Surveillance Activity

Project #2 Description:

The Wisconsin Coverdell Stroke Program (WCSP) data systems are undergoing two significant changes. First, the stroke registry owned by the American Heart Association is undergoing significant updates to include more user-friendly interfaces and data query opportunities. Second, WCSP is purchasing a novel functionality for hospital abstractors to link emergency medical services (EMS) data to hospital data on stroke patients. Linked EMS and hospital data allow WCSP to track a stroke patient's outcomes from their first touch point with EMS all the way through hospital discharge. These two shifts provide an opportunity for our fellow to contribute significantly to enhancements in Wisconsin's stroke surveillance. In collaboration with EMS and hospital partners, our fellow will have the opportunity to create public-facing surveillance tools using linked data, such as interactive maps and dashboards, and help design a stroke system surveillance plan for EMS and hospital partners to improve stroke care in Wisconsin.

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

Project #2 Objectives and Expected Deliverables:

Objectives:

- 1) Develop in-depth knowledge of the American Heart Association's Get with the Guidelines® (GWTG) Stroke Registry, as well as EMS and hospital discharge datasets.
- 2) Gain public health registry and database management experience.
- 3) Identify and select important measures in stroke care to continuously monitor using linked EMS and hospital data.
- 4) Develop familiarity with data visualization best practices and Tableau, ArcGIS, or other data visualization software.

Expected deliverables:

- 1) Interactive map and data dashboards on the DHS Coverdell stroke website.
- 2) Internal report detailing stroke care from EMS runs to hospital admission to post-stroke care and the burden of stroke.
- 3) Contribute to the stroke surveillance system planning using linked EMS and hospital data.

Project #2 Impact:

Stroke is one of the leading causes of hospitalization, disability, and death in Wisconsin. Our fellow's contributions to WCSP's stroke surveillance planning and efforts will help shape EMS and hospital partners' quality improvement projects to improve stroke care and reduce stroke burden.

Additional Project #3 Title: Assess Race and Ethnicity Data in Hospital Discharge Data and Birth Records

Project #3 Type: Surveillance System Evaluation

Project #3 Description:

Our fellow will have the opportunity to assess the agreement in race and ethnicity fields between hospital discharge data and Wisconsin birth certificate data using the Linked Birth Outcomes Surveillance System (LBOSS).

Project #3 Objectives and Expected Deliverables:

Objectives:

- 1) Develop in-depth knowledge of hospital discharge and vital records datasets.
- 2) Gain familiarity with data linkage best practices and applied methods.
- 3) Develop skills to evaluate data quality across systems.

Expected deliverables:

- 1) Data brief detailing findings of race and ethnicity field agreements between datasets.
- 2) Recommendations on improving data quality collection and concordance between hospital discharge and birth datasets.

Project #3 Impact:

Findings from this project will improve data collection, reporting practices, and data quality in two of the most robust public health surveillance systems in Wisconsin. Improving the quality of race and ethnicity fields will also lead to data that better reflects individuals' identities.

Additional Project #4 Title: Action-Oriented PRAMS Analysis and Dissemination

Project #4 Type: Surveillance Activity

Project #4 Description:

Wisconsin has a strong history of using data from the Pregnancy Risk Assessment Monitoring System (PRAMS) for public health action, including dedicated work with Tribal nations to support breastfeeding through community outreach and

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

engagement. In collaboration with the PRAMS team, our fellow will have the opportunity to work with partners to design a PRAMS data analysis and dissemination project.

Project #4 Objectives and Expected Deliverables:

Objectives:

- 1) Engage with Wisconsin PRAMS Steering Committee and community partners.
- 2) Collaborate on a data-to-action project.
- 3) Identify opportunities for incorporating qualitative data analysis of open-ended comments shared by PRAMS respondents.

Expected deliverables:

- 1) Aggregated dataset to share with program partners.
- 2) Data-to-action report.

Project #4 Impact:

PRAMS is a unique and rich data source. Promoting data-to-action projects and making data available to community partners enhances maternal and child health work across Wisconsin.

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

The Chronic Disease Prevention Unit and MCH Program are well connected with the Office of Preparedness and Emergency Health Care (OPEHC), which coordinates public health and hospital preparedness, classification of Level 3 and 4 trauma centers, and emergency medical services licensing. Time allocation to preparedness and response efforts will be flexible dependent upon our fellow’s project and agency priorities.

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

We will connect our fellow with current Epidemic Intelligence Service (EIS) officers and other colleagues in the Bureau of Communicable Diseases (BCD), so they have opportunities to participate in cluster and outbreak investigations. Time allocation for investigations will be flexible dependent upon our fellow's project and agency priorities.

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

Our fellow will have the opportunity to work with supplemental PRAMS data collected on COVID-19 experiences and vaccination. If our fellow has interest in working on additional COVID-19 activities, we will be able to connect them with colleagues in the Bureau of Communicable Diseases (BCD). The time allocation will be flexible dependent upon our fellow’s project and agency priorities.

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

There are many opportunities in our agency for our fellow to work in the health equity space, including but not limited to:

- Health Equity Advisory Team (HEAT)
- Collaborations with Office and Bureau Health Equity Advisors

ID: 46356210

Chronic Disease, Maternal and Child Health - Host Site Description

Wisconsin Department of Health Services

- Bureau of Community Health Promotion (BCHP) Health Equity Team
- Data equity projects with Family Health Section (FHS) data team
- Data Management Advisory Team - social determinants of health dataset project
- Provide analytic support to program activities focused on reducing health disparities