Birth Defects and NAS

Wisconsin Department of Health Services, Division of Public Health

Madison, Wisconsin

Assignment Description

The Family Health Section (FHS) in the Bureau of Community Health Promotion (BCHP) in the Wisconsin Division of Public Health (DPH) consists of cross-cutting and integrated programs throughout the lifespan: maternal and child health (MCH); birth defects surveillance; reproductive health; genetics; universal newborn hearing screening; children and youth with special health care needs (CYSHCN) that includes children with behavioral and mental health issues; injury and violence prevention, which houses the Wisconsin Violent Death Reporting System. The FHS is also strengthening partnerships with physical activity and nutrition (including WIC); and chronic disease (tobacco prevention and control, diabetes, heart disease and stroke, cancer control, and the Well-Woman program). This is in response to the MCH 5-year needs assessment that identified priority areas and performance measures.

This placement will provide the fellow with the opportunity to work on any number of available projects. The surveillance evaluation of the Wisconsin Birth Defects Registry will allow for collaboration with the Birth Defects Program, along with the Wisconsin Council on Birth Defect Prevention and Surveillance. In addition, the FHS Data Team members have extensive experience conducting surveillance evaluations and will be available to support the fellow in this project. The proposed major project will allow the fellow to take advantage of the rich data sources and linked files available in OHI. The mentors look forward to working with the fellow to identify opportunities to enhance their skills in analyzing and translating data into evidence-informed public health practice.

The CSTE fellow will have exposure to all areas of epidemiology, program evaluation, and disease surveillance in FHS and OHI, including 10 epidemiologists and research analysts. These individuals, along with students from the University of Wisconsin School of Medicine and Public Health and a number of fellows and trainees, make up a learning community that contributes to public health workforce development.

Day-to-Day Activities

- Attend weekly meetings with mentors (2-4 hours per week as specified, minimum)
- Actively participate in the Family Health Section (FHS) Data Team, which meets biweekly and includes the CDC Maternal and Child Health assignee, FHS epidemiologist/evaluator, Statewide Systems Development Initiatives coordinator, Children and Youth with Special Health Care Needs epidemiologist, Pregnancy Risk Assessment Monitoring System project director, the newborn screening data integration specialist, Title X women’s health epidemiologist, and Zika surveillance coordinator.
- Participate in the following additional meetings: Division of Public Health (DPH) Epidemiology Seminars (monthly); FHS meetings (monthly); Bureau of Community Health Promotion-wide meetings (quarterly); Office of Health Informatics (OHI) staff meetings (monthly); OHI Research Team meetings (biweekly); and Preparedness meetings and trainings (as appropriate)
- Attend and make at least one presentation in a learning session at DPH or a partner organization
- Attend weekly public health seminars at the University of Wisconsin School of Medicine and Public Health as applicable
- Attend geographic information systems (GIS) user group meetings and SAS user group meetings
- Choose one or more epidemiologic surveillance, program evaluation, or policy development projects and follow it/them from development to investigation to data collection to analysis to report or manuscript completion
- Become comfortable with indicator development, database linkage, GIS mapping, and evidence-based public health
- Participate in policy development and implementation

**Potential Projects**

**Surveillance Activity  NAS Surveillance to Support Quality Improvement (QI) Efforts**

The Wisconsin Perinatal Quality Collaborative (WisPQC), a key partner of FHS, received funding from the Centers for Disease Control and Prevention in 2017 to improve the identification and care of infants with NAS and women with opioid use disorder. An important part of this effort is identifying population-level measures to put the QI activities into context, understand local differences, and track statewide progress over time. The fellow will participate in WisPQC workgroups focused on NAS measurement and lead the development and ongoing use of population measures. This work will provide an opportunity to partner with clinicians and to explore how surveillance data can complement information collected by local facilities as part of QI efforts. Audiences for dissemination of NAS surveillance data will include local hospitals and clinics, statewide partners, local public health departments, providers, and CDC.

**Surveillance Evaluation  Evaluation of the Wisconsin Birth Defects Registry**

The Wisconsin Birth Defects Registry (WBDR) was implemented in 2003 and is required by state statute. The original statute created an opt-in registry for WBDR, meaning that parents/guardians had to provide consent in order for their child’s identifying information to be submitted along with information about their birth defect. This resulted in very low reporting. In 2017, the statue was updated and the opt-in requirement was removed. Providers and organizations are now required to submit identifiers with birth defect cases, allowing the Department of Health Services to identify duplicate records, connect families to services, and conduct birth defect surveillance. The WBDR was recently enhanced and moved into the Wisconsin Electronic Disease Surveillance System (WEDSS). A comprehensive evaluation of the WBDR, with an emphasis on user acceptance of the new system, will help to determine additional changes or enhancements that are needed.

**Major Project  Hospitalizations Among Infants Diagnosed with NAS**

Neonatal abstinence syndrome (NAS) in Wisconsin increased from a rate of 2.0 per 1,000 live births in 2006 to 8.6 per 1,000 live births in 2017 (330% increase). Infants who are diagnosed with NAS often experience additional adverse birth outcomes such as prematurity, low birth weight, respiratory issues,
and others. In Wisconsin, approximately 51% of infants born with NAS are admitted to the neonatal intensive care unit following delivery. However, little information is available regarding subsequent hospitalizations among infants diagnosed with NAS. The fellow would have an opportunity to look at linked hospitalization records to determine if hospitalizations are more frequent and/or severe among infants who were diagnosed with NAS. This project could also include determining common reasons for hospital visits through analysis of ICD coding on hospital records. This information could help identify if a higher frequency of hospitalization among infants diagnosed with NAS is due to biological issues (e.g. higher rates of hospitalizations with flu-like symptoms) or behavioral issues (e.g. injuries due to abuse or neglect). Additionally, the fellow could analyze linked prescription drug monitoring program data and birth records to determine if there are differences in hospitalizations among infants diagnosed with NAS based on type of opioid the mother received during pregnancy (e.g. medication assisted treatment, opioid for pain treatment, or illicit opioid) and/or prenatal care adequacy (e.g. Kotelchuck scores of adequate plus or inadequate). This information would be extremely beneficial for clinicians who are treating infants diagnosed with NAS as well as improving our overall understanding of the impact of NAS.

Additional Project  Surveillance Report on Children and Youth with Special Health Care Needs
Survveillance data on children and youth with special health care needs (CYSHCN) at the state and local level are limited. Even when available, ability to analyze and report by CYSHCN status is typically limited due to small numbers and unreliable estimates. Wisconsin Department of Health Services is partnering with the National Survey of Children’s Health (NSCH) and the United States Census Bureau to conduct an oversample in the state starting with the 2020 NSHC survey year. The oversample will provide approximately 1,000 additional responses for analysis. The fellow will analyze the survey data and create a new surveillance report that describes the health outcomes and health care access and utilization of CYSHCN children in Wisconsin compared to the U.S. and will also determine if disparities exist among Wisconsin CYSHCN. In addition to analytic skills, this project will help the fellow enhance their writing and data visualization expertise.

Additional Project  Analysis of Medicaid Claims Data
The Wisconsin Medicaid program is located in the Division of Medicaid Services, which is part of the Department of Health Services. This provides the Family Health Section with access to Medicaid claims data and content expertise. The fellow will have the opportunity to analyze Medicaid claims data for an additional project. The project could focus on topics such as children receiving a developmental screening, children and youth with special health care needs accessing medical and oral health services, or children that are eligible for the complex care program that are enrolled in the program.
**Preparedness Role**

The fellow will participate in incident command system training and certification activities and will be assigned a specific role in the event of an incident, such as an environmental spill, pandemic flu outbreak, fire, weather, or other emergency. If interested, the fellow could also identify a preparedness project focusing on a special population such as children and youth with special health care needs. Previous fellows have had the opportunity to participate in trainings, contribute to the Ebola and H1N1 responses at federal and state levels, and attend table top and field exercises.

**Additional Activities**

Optional available activities include assess and track health indicators for special populations; use small area estimation statistical techniques (e.g., multi-level regression modeling) to generate county-level estimates for children and youth with special health care needs (CYSHCN) indicators; develop and create new surveillance reports or infographics; create maps and conduct spatial analysis for CYSHCN, birth defects and/or neonatal abstinence syndrome using geographic information systems; identify opportunities to incorporate qualitative data analysis; provide analytic support to program activities focused on reducing health disparities.

**Mentors**

**Primary**  
Ousmane Diallo MD, MPH, PhD  
Chief Epidemiologist, Office of Health Informatics

**Secondary**  
Melissa Olson BS, MS  
Children and Youth with Special Health Care Needs Epidemiologist