

Chronic Diseases/ Maternal and Child Health

Assignment Description

The Division of Population Health 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 chronic disease prevention and control and in maternal and child health. Programmatic areas within the Division include Physical Activity; Nutrition; Obesity; Tobacco; Injury Prevention; Adolescent and School Health; Maternal and Child Health; Children with Special Health Needs; Community-based Prevention; Asthma; Diabetes, Heart Disease, and Stroke; Oral Health; 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 chronic disease epidemiology, with opportunities to gain experience in public health preparedness and communicable disease, as well as opportunities for collaborative work with maternal and child health, injury, 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.

Day-to-Day Activities

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 chronic disease surveillance data (mortality, hospital discharge, emergency department, cancer registry, risk factor survey data, etc.); interpreting that data and creating tables, charts, and narrative for program staff use; preparing recommendations for chronic disease programs 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 chronic disease program planning; meeting with Maine CDC staff to better understand the organization and its public health programs; participating in regular chronic disease epidemiology (weekly) team meetings, programmatic staff meetings as appropriate, and division-wide staff meetings; designing and implementing an evaluation of a chronic disease surveillance system; working with chronic disease program staff to help them understand, interpret, and use relevant chronic disease 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.

Potential Projects

One of the Fellow's first projects will be to evaluate a surveillance system. Possibilities include:

- 1) The Maine Integrated Youth Health Survey, a biennial health status, behavior, and attitude survey of more than 80,000 Maine children in Kindergarten, 3rd grade, 5th & 6th grades, 7th & 8th grades, and high school
- 2) The Adult or Child Asthma Call-Back Survey, which are very detailed surveys of asthma control, treatment, and triggers and are call-back surveys to the Behavioral Risk Factor Surveillance System
- 3) Maine's new legislatively mandated surveillance system for monitoring body mass index among students, which is being implemented through Maine's immunization registry, ImmPact2. Choice of surveillance system will depend upon the Fellow's interests

Other potential projects include (these are not in any particular order):

- 1) Conducting detailed analyses of BRFSS data. Potential projects include examining county or district-level trends in chronic disease-related indicators; trends in racial and socioeconomic disparities in chronic disease-related indicators; analysis of potential interrelationships between alcohol use, mental health indicators, oral health, and chronic disease; examining trends in chronic diseases and risk factors among women of reproductive age.
- 2) Examining trends in chronic disease rates (mortality, hospital discharge, incidence) using joinpoint regression methods to identify significant changes in trends.
- 3) Analyzing Asthma Call Back Survey data for adults to examine potential reasons why those with MaineCare (Medicare) have higher hospitalization and emergency department visit rates than those with other insurance. The ACBS would allow examination of whether differences in disease prevalence, self-management, control, medication use, and exposure to environmental triggers can account for some or all of those differences.
- 4) Using Maine Cancer Registry data to conduct survival analysis for specific cancers, and examine differences in survival over time and by demographic and geographic factors.
- 5) Analyzing county or public health district-level chronic disease prevalence, risk factors, and complications data to develop a county or district-level chronic disease "index".
- 6) Conducting analyses of physical activity, nutrition, tobacco, and obesity data from the Maine Integrated Youth Health Survey (and its precursor surveys) and the School Health Profiles (school-level data on school environment, policies, practices), including trend and multivariate analyses.
- 7) GIS projects include: using GIS tools to identify and illustrate very rural and high poverty areas in Maine and examining disparities in health care access, risk factors, and chronic diseases in these areas compared with the rest of Maine; using GIS tools to identify and illustrate the small areas of racial diversity in Maine; identifying high risk asthma areas using GIS and climate data; examining drive time to stroke or heart attack capable hospitals compared with areas of high stroke or heart attack burden; working with the team creating a Maine Chronic Disease Atlas.

- 8) Writing a State Burden Report on a chronic disease or risk factor topic. A burden document on obesity is one possibility, as are profiles on the burden of chronic disease and their risk factors in rural, poor Maine and on chronic diseases in Maine's older population in rural compared to urban areas.
- 9) Working with DPH program staff to analyze, interpret, and disseminate data from the new Maine system assessing student body mass index.
- 10) Developing new fact sheets on physical activity, nutrition, and obesity in Maine; including information on behaviors among adults and children as well as policy and environmental information.

If the Fellow has an interest in MCH or injury epidemiology, some potential projects include:

- 1) Analyzing PRAMS data to examine trends and variables associated with c-sections and induced labor.
- 2) Analyzing birth certificate data to examine trends in pre-term birth and specifically changes in late-preterm birth over time.
- 3) Analyzing a linked MaineCare-birth certificate dataset to determine differences in birth outcomes between Maine's Medicaid and non-Medicaid population.
- 4) Assisting with the linkage of child welfare data and birth certificate data and analyzing as part the evaluation of Maine's home visiting program.
- 5) Comparing rates of smoking during pregnancy on PRAMS to Maine's birth certificate and examining trends in the concurrence of these data systems over time. Once the new birth certificate is adopted by Maine, how might this change our measure of smoking rates among pregnant women?
- 6) Participation in the evaluation of Maine's Home Visiting Program by assisting with survey development, data collection and analysis.
- 7) Contributing to Maine's Maternal and Child Health Five-Year Needs Assessment through the analysis of birth certificate, death certificate, PRAMS, hospitalization and other data sources to inform the selection of MCH priorities.
- 8) Conducting analyses of key injury priorities using hospitalization, ED and death data to inform program planning.
- 9) Developing a suicide surveillance report using BRFSS, death certificate, hospitalization, emergency department and youth health survey data.
- 10) Creating a surveillance brief focused on intimate partner violence and sexual assault data from PRAMS, BRFSS and the Maine Integrated Youth Health Survey. This would include analyzing data from a new sexual harassment question that was added to the 2013 BRFSS survey
- 11) Identifying key women's health indicators and creating a brief report on women's health that can be updated annually.
- 12) Creating a Lifecourse MCH report using nationally developed indicators and conducting an analysis that demonstrates the link between early life experience and later health outcomes.

Fellows will also do a 1-2 week rotation with both the Infectious Disease Epidemiology group and the Office of Public Health Emergency Preparedness, will participate in at least one outbreak investigation with the Division of Infectious Disease staff, and will participate in activities of the Office of Public Health Emergency Preparedness. There will also likely be opportunities to be involved in responding to cancer cluster concerns.

Mentors will work with the Fellow to choose projects that fit with the Fellow's interests, fulfill the competency areas, and provide solid broad-based experience in applied chronic disease epidemiology. These projects will involve the Fellow with staff across the Division, the Maine CDC, and from other states and CDC. Projects provide opportunities to present at national conferences and submit manuscripts to peer-reviewed journals.

The Fellow will present work to state advisory boards and will be mentored in handling data and technical assistance requests (e.g., from public, legislators, and media). Projects in chronic disease and other areas not mentioned above can easily be arranged.

Preparedness Role

Fellows will do a 1-2 week rotation with both the Infectious Disease Epidemiology group and the Office of Public Health Emergency Preparedness, will participate in at least one outbreak investigation with the Division of Infectious Disease staff, and will participate in activities of the Office of Public Health Emergency Preparedness. Some potential public health preparedness projects include examining preparedness of long-term care facilities, evaluating Maine's use of the Health Alert Network and providing recommendations for improving messaging, and being involved in public health response to emergency events like blizzards and floods. Maine's State Epidemiologist has agreed to assist the mentors as needed in ensuring the fellow has opportunities to work in preparedness and on an outbreak.

Assignment Location: Maine Center for Disease Control and Prevention
Augusta, ME

Primary Mentor: Sara Huston, PhD
Lead Chronic Disease Epidemiologist

Secondary Mentor: Erika Lichter, ScD
Lead Maternal & Child Health Epidemiologist