

Chronic Diseases, Injury

Baltimore City Health Department, Office of Chronic Disease Prevention

Baltimore, Maryland

Assignment Description

The Fellow will be placed in the Baltimore City Health Department (BCHD) Office of Chronic Disease Prevention (OCDP). His/her work will primarily focus on OCDP's chronic disease epidemiology needs for data analyses to inform program and policy decision-making, fulfillment of data requests, analyses and planning for monitoring and evaluation, and drafting reports and summaries. The Fellow will also work on an evaluation of BCHD's falls surveillance system and will be assigned to a detail with the Acute Communicable Disease team to learn about outbreak investigations. In addition, the Fellow will participate in BCHD's emergency preparedness and response activities. The Primary and Secondary Mentors for the Fellow will be Dr. Darcy Phelan-Emrick (Chief Epidemiologist) and Dr. Brionna Hair (Epidemiologist), respectively.

OCDP focuses on the prevention of cardiovascular disease, cancer, asthma, childhood lead poisoning, and on improved tobacco control and access to healthy foods for Baltimore City residents. Its responsibilities include: collaboration with federally qualified health centers on cardiovascular health and cancer, home visits/interventions for referred families with childhood asthma, outreach and home visits/interventions for families with children who have elevated blood lead levels (5-9 micrograms/dL), enforcement of the city's lead laws, maintenance of lead violation data, education of tobacco retailers, enforcement activities for tobacco sales to minors, and work to improve access to healthy foods through the Baltimarket Initiative, including the Virtual Supermarket Program that delivers groceries to pick-up locations in the city's food deserts.

Day-to-Day Activities

- Analyze confidential data (e.g., vital statistics data, emergency department and inpatient hospitalization discharge data, Maryland Cancer Registry data)
- Draft summaries of analysis findings and text for reports
- Review and fulfill data requests for BCHD staff, the media, and the Mayor's Office
- Meet with BCHD staff and partners to understand data and evaluation needs
- Write evaluation plans for funding applications
- Identify public datasets for analysis
- Read journal articles and the news to stay up-to-date with developments in chronic disease epidemiology
- Work on the activities and projects described in this application

Potential Projects

Surveillance Chronic Disease Surveillance Dashboard Activity

The Fellow will create an interactive online dashboard to summarize surveillance of Baltimore City chronic diseases and associated risk factors by demographics, geography, and time. The dashboard will be used by BCHD staff and leadership in assessment, policy development, and evaluation, and it will be made available publicly. This effort will involve calculating crude and age-adjusted estimates over time for mortality by various chronic diseases at the city and neighborhood levels using vital statistics data. The Fellow will analyze data from the Maryland Cancer Registry to characterize cancer incidence by cancer site at the city and neighborhood levels over time. Data from the Maryland Health Services Cost Review Commission will be analyzed at the city and census tract levels to describe the burden of emergency department visits and inpatient hospitalizations for chronic diseases in Baltimore City over time. For data only available at the city level (e.g., Maryland Behavioral Risk Factor Surveillance System (BRFSS), Youth Risk Behavior Surveillance System (YRBS)), the Fellow will download, analyze, and summarize trends over time by demographic factors. When available for Baltimore City or its metropolitan area, US Chronic Disease Indicators will be calculated as well. For comparison purposes, data for the state of Maryland and the US overall will be included. The Fellow will explore the possibility of including chronic disease-related ESSENCE data in the dashboard and chronic disease data from Maryland's health information exchange. The Fellow will work with BCHD's Chief Informatics Officer and his team to create the interactive dashboard using InstantAtlas (<https://goo.gl/5pJBAM>) or a similar dashboard tool.

Surveillance Evaluation of the B'FRIEND (Baltimore Fall Reduction Initiative Engaging Evaluation Neighborhoods and Data) Falls Surveillance System

BCHD, in partnership with Maryland's health information exchange, CRISP (Chesapeake Regional Information System For Our Patients), recently implemented a novel surveillance system to monitor falls among older adults using health information exchange data in Baltimore City. The Fellow will conduct an evaluation of this new surveillance system. He/she will follow guidelines from CDC - such as "Updated Guidelines for Evaluating Public Health Surveillance Systems" (MMWR, May 7, 2004 / 53(RR05);1-11) and "Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks" (MMWR, July 27, 2001 / 50(RR13);1-35) - as well as more recent resources that summarize best practices - such as "Public Health Surveillance Systems: Recent Advances in Their Use and Evaluation" by Groseclose and Buckeridge (Annual Review of Public Health, March 2017, Vol. 38:57-79). Methods described by CSTE in its 2015 four-part webinar series on public health evaluation will be utilized as well. The Fellow will engage stakeholders in conducting the evaluation. He/she will write a report summarizing the evaluation, findings, and recommendations. The report will be shared with stakeholders, and the Fellow will give an oral presentation or webinar summarizing the work. He/she will also prepare an abstract and a manuscript of this work for submission to a conference and

a peer-reviewed public health journal. Ultimately, information generated from the evaluation will be used to make improvements to this novel surveillance system.

Major Project Assessment of Smoking Behaviors and the Burden of Smoking-Related Lung Diseases in Baltimore City

The Fellow will incorporate data from several sources to describe smoking behaviors and the morbidity and mortality of smoking-related lung diseases (e.g., lung cancer, COPD, etc.) in Baltimore City. This will involve downloading, cleaning, managing, analyzing, and mapping incidence and mortality data from the Maryland Cancer Registry, the Maryland Department of Health Vital Statistics Administration, and the Maryland Health Services Cost Review Commission. The Fellow will use data from the 500 Cities Project to examine the projected prevalence of smoking in Baltimore City neighborhoods. Additionally, the Fellow will obtain data on the utilization of smoking cessation services in the city and perform geospatial analyses examining the locations of services relative to smoking-related lung disease morbidity and mortality. The Fellow will create an interactive map in ArcGIS Online for BCHD's map gallery (www.baltimorecity.gov/healthmaps) and will summarize and interpret the results of the analyses for inclusion in a planned health department report on cancer in Baltimore City. The Fellow will also present their findings and map to the Baltimore City Cancer Coalition and other stakeholders, such as the Maryland State Council on Cancer Control.

Additional Project Evaluation of the Billion Steps Challenge: A BCHD Physical Activity Initiative

The Fellow will conduct outcome evaluation of BCHD's Billion Step Challenge (<http://www.baltimorebillion.com/>). This year-long city-wide initiative, launched in July 2017, encourages participants to increase physical activity through walking as a form of exercise. The Fellow will use statistical software to analyze survey responses from participants to evaluate how effective the initiative was in increasing physical activity. The Fellow will interpret the findings and make recommendations to inform the design and implementation of future BCHD public health interventions. The Fellow will communicate the evaluation results in a presentation to BCHD leadership and Office of Chronic Disease Prevention staff.

Additional Project Temporary Detail with Office of Acute Communicable Disease

Given that the Fellow will focus the majority of his/her time on chronic diseases, a temporary detail with BCHD's Office of Acute Communicable Disease (ACD) will be arranged so the Fellow will have the experience of participating in outbreak investigations. The ACD team includes four epidemiologists - one of whom serves as the Director. The Fellow will join the ACD team as it progresses start-to-finish through the steps of at least one outbreak investigation. The Fellow will write a field investigation

report and receive feedback on the report from the ACD team. The team will also expose the Fellow to NEDSS (National Electronic Disease Surveillance System) and other tools and resources used during their daily operations. Counts for selected notifiable conditions for Baltimore City are available at <https://goo.gl/cTLUcn>.

Preparedness Role

The Fellow will participate as an entry-level epidemiologist in BCHD's public health emergency preparedness and response activities. He/she will be assigned a role in BCHD's incident command system (ICS), and will complete the necessary in-person and online trainings within 6 months of onboarding. The Fellow will become familiar with the epidemiology components of BCHD's emergency response plans, and he/she will participate in tabletop exercises, drills, related activities, and, if necessary, actual emergency responses.

Additional Activities

Creation of static and interactive online maps; ESSENCE query development; submission of data requests to government and partner agencies

Mentors

Primary Darcy Phelan-Emrick DrPH, MHS

Chief Epidemiologist

Secondary Brionna Hair PhD, MPH

Epidemiologist