**Assignment Description**

BCHP offers a broad range of opportunities for applied epidemiology projects, including public health surveillance, program planning and execution, data extraction and analysis for policy development, and outreach. The incoming Fellow will gain experience and develop expertise in a broad range of programs and activities during the two-year fellowship period.

Based on the interests of the Fellow and guidance from the primary and secondary mentors, a work plan will be developed to allow the Fellow to choose from a wide variety of activities that address the fellowship’s core competency requirements and broaden the Fellow’s perspective and understanding of chronic disease prevention and community resource development. BCHP maintains expertise in screening and surveillance, healthy community programming and policy development, and community engagement and outreach. BCHP maintains strong collaborations with faculty and academic staff at the University of Wisconsin-Madison, the University of Wisconsin-Milwaukee, and Marquette University. The primary mentor holds an adjunct faculty appointment at the University of Wisconsin-Madison and can help facilitate linkages with University staff, programs and resources as needed for various projects. The secondary mentor also maintains relationships with multiple community organizations and outreach partners.

Additionally, as opportunities arise, the Fellow will be invited to participate in field experiences such as primary data acquisition assessing disease burdens in vulnerable populations and analyzing and presenting such data to impact policy development. The Fellow is strongly encouraged to present and publish results from surveillance and research activities. The mentors work with the Fellow to identify such opportunities, and support for travel to local conferences and workshops is provided as needed.

**Day-to-Day Activities**

While there will be situations when the Fellow will need to work in the field as part of surveillance or during an exercise, a majority of the time is spent at the BCHP home office. From here the Fellow will work with data to develop analytic skills, create oral and written presentations to summarize work and disseminate findings, and collaborate with partners to develop and implement project ideas. As partnerships are the key to effective community resource development for chronic disease prevention, the Fellow will also attend a variety of meetings with stakeholders. While there are a number of resources and experts readily available to guide the Fellow’s activities, it is also expected the Fellow will demonstrate a reasonable amount of independence and initiative to identify areas of interest, seek out additional resources as necessary, and complete assigned tasks.
Potential Projects

Surveillance Activity  Field Survey of Head Start Children

The Oral Health Program (OHP) goes into the field to perform primary data collection to assess the burden of oral disease via basic screening surveys (BSS). The OHP performs such original data collection on a regular basis among several vulnerable populations, including Head Start children, third-grade children, ninth-grade adolescents, adults, and older adults in nursing homes. All surveillance uses the Association of State and Territorial Dental Directors (ASTDD) BSS protocol. This survey consists of hiring and training screeners (generally dental hygienists) to go to sites, directly assess burden of oral disease, and input the data to a secure database. During the timeline of this fellowship, we expect to implement the next BSS for Head Start children. The Fellow would be instrumental in determining any methodology changes needed since the prior survey was performed five years ago and would provide expertise on data collection best practices and protocols. The Fellow will be responsible for overseeing data collection, data cleaning, weighting, analysis, and reporting. We anticipate these field-collected data to be used to impact policy decisions regarding oral health. This project will offer the Fellow experience with field-based surveillance, while simultaneously offering them the experience of designing, developing, analyzing, reporting and disseminating results from this project from start to finish.

Surveillance Evaluation  Seal-A-Smile DentaSeal Database Evaluation

School-based dental sealant programs are an effective, evidence-based method for reducing tooth decay of permanent molars. The Wisconsin Seal-A-Smile program serves students across the state in priority schools: those with 35% or greater population eligible for free and reduced-price meals. During the 2018-19 school year, Seal-A-Smile served, and collected data on, more than 70,000 Wisconsin school-aged children. With partners, the OHP has developed a proprietary application, DentaSeal, to capture real-time data from children served by Seal-A-Smile. The Fellow will have the opportunity to formally assess the quality of the data collected, comparing and contrasting the data to that of other states. The Fellow will also have the opportunity to identify potential improvements in data collection and entry methods, survey users of the system to gather feedback on strengths and opportunities, make recommendations for updates that would enhance data collection and accuracy, and ultimately evaluate the utility of maintaining the DentaSeal application. Because the DentaSeal database contains more than five years of continuous data on students across the state, there is tremendous opportunity for original research using this database, with opportunities to identify disparities, compare effectiveness across different types of programs and/or regions of the state, determine cost/benefits of caries averted, and make resulting policy recommendations.

Major Project  Analysis of African-American Breast Cancer Mortality in Milwaukee

Southeastern Wisconsin, where Greater Milwaukee is located, is home to nearly 90% of Wisconsin’s African-American population. In Milwaukee, the incidence of breast cancer among African-American women have recently surpassed that of White women. The mortality rate shows an enormous disparity, rising 37% over the past decade among African-American women, while the White mortality rate decreased 14% during the same time period. Opportunities exist for the Fellow to apply advanced epidemiological skills and conduct outreach and education with the Milwaukee African-American community, and community and academic partners to better understand the root causes of these disparities, and, using community participatory research and engagement methods, develop
interventions designed to reduce the mortality rate among African-American women. The Wisconsin Well Woman Program (WWWP) has been at the forefront of promoting breast and cervical cancer screening, and we seek to understand the impact that program has had on the incidence and mortality rates observed in the data. The Fellow would have the opportunity to utilize GIS mapping software to assess correlations between screening, incidence and mortality rates by zip code and/or census tract to identify priority communities for engagement.

Additional Project Integrating Data Across Stroke Systems of Care

The Wisconsin Coverdell stroke program has been successfully reducing door to emergency room, and door to medication administration for individuals experiencing stroke. The reductions in time to care have occurred through a coordinated effort between emergency medical systems (EMS) and hospitals around the state. As we continue our efforts to improve the speed and accuracy of stroke care, we are working on quality improvement (QI) efforts around data transfer between EMS and hospitals, so that each entity can in turn perform their own QI processes.

The Fellow will have the opportunity to work collaboratively with the Coverdell team to perform time-series analyses of patient-level data for pre-hospital, in-patient, and out-patient stroke care. These efforts will involve communication with hospitals, EMS providers and administrators, and software specialists. The Fellow will have the opportunity to identify best practices for optimum information feedback loops and serve as a resource for the stakeholders’ QI activities. The Fellow will also be able to apply learnings through program and policy recommendation development.

Additional Project Enhancing Oral Health Data Reporting

The OHP collects, analyzes, and disseminates many oral health indicators for inclusion in the Environmental Public Health Tracking (EPHT) portal. The WI EPHT is a searchable, publicly-available database, which is therefore a key information vehicle for our partners in local public health departments, community service organizations as well as for health systems and payers. The module includes both state and county level counts and rates, and can be stratified by age, race, and ethnicity. These data are essential to have readily available and updated on a regular basis to fully assess trends and opportunities for improvement in oral health and policy decision making. This project will offer the Fellow experience with cutting edge surveillance and evaluation solutions while simultaneously providing them with the experience of validating this oral health surveillance system.

Preparedness Role

The Fellow will participate in Incident Command System (ICS) training and certification activities and will be assigned a specific role in the event of an incident, such as an environmental spill, pandemic disease outbreak, fire, weather, radiological contamination, power outage, bioterrorism, or other emergency. If interested, the Fellow could also identify a preparedness project focusing on special populations, such as injection drug users, children, pregnant women, individuals with chronic diseases and disabilities, low-income populations, or those with limited English proficiency. Previous Fellows have had the opportunity to participate in trainings, attend table top and field exercises, and contribute to the Ebola and H1N1 responses at federal and state levels.
**Additional Activities**

The Fellow will be able to choose from a broad variety of topics, including analyses of data related to cancer incidence and mortality, oral health disease burden, stroke coordination of care, and other chronic disease prevention opportunities. The Fellow will also be joining the DPH just as the State Health Assessment is being released, and during the development of the State Health Improvement Plan (SHIP). As part of the SHIP process, the Fellow will have the opportunity to engage with collaborators to formulate evidence-based policies designed to significantly impact public health, with a major concentration on health equity and power-building among lower-resourced communities. The SHIP process will be undertaken across all bureaus and offices with the DPH, thus allowing the Fellow the opportunity to work with a plethora of programs and experts.

**Mentors**

**Primary**  
Mark Wegner MD, MPH  
Chronic Disease Medical Director

**Secondary**  
Lena Swander MPH  
Epidemiologist-Advanced