

Non-Infectious Diseases (Cross-Cutting), Infectious Diseases

Chatham County Public Health Department, Health Promotion and Policy Division

Pittsboro, North Carolina

Assignment Description

The fellow will be housed within the Chatham County Public Health Department's Health Promotion and Policy (HPP) Division, with opportunities to engage with other divisions and community/state partners through Epi Team, Emergency Preparedness, and other public health activities. The Public Health Department has the broad charge "to protect and promote the health and safety of Chatham residents, and the vision of the HPP Division is to "empower all members of the community to achieve their optimal health through collaborative initiatives and policies." The HPP Division's initiatives include: the Chatham Health Alliance, community assessment (including the community-based cohort assessment), policy-level interventions to improve population health (such as tobacco policy and community design), emergency preparedness, health informatics, childcare health consultation, school-based health initiatives, vital records, and media and communications.

The fellow will meet regularly with Dr. Edwards, who will provide methodological expertise, answer subject-specific questions, and connect the fellow to additional resources and opportunities at UNC-Chapel Hill. The fellow's supervisor will be Michael Zelek, the HPP Division Director and Preparedness Coordinator/Epi Team Chair. The fellow will work closely and have frequent interaction with Michael to ensure objectives are clearly defined and that s/he has the necessary information, points of contact, and resources to carry out projects successfully. Both mentors commit to being actively involved in the fellowship and doing what they can to provide a meaningful and mutually beneficial experience, while allowing the fellow the opportunity to work independently and grow as an epidemiologist and professional.

Day-to-Day Activities

Day-to-day activities are purposely broad to provide the fellow with a diverse set of experiences and include:

- Designing, implementing, and evaluating the community-based cohort assessment, including sampling and recruitment methods, surveys/questionnaires, and interpreting findings.
- Determining relevant social determinants of health and assessing causal links to prioritized health outcomes.
- Conducting data analysis using statistical software.
- Assisting with data visualization and presentations.
- Working with the Epi Team to update and implement the strategic plan.
- Participating in infectious disease response activities.
- Assisting the Preparedness Coordinator with emergency preparedness activities, including tabletop exercises, after-action planning, and recommending control measures.
- Conducting analyses using data from a variety of sources, including health records, vital records, and emergency department data.
- Meeting with stakeholders to determine appropriate intervention strategies and developing assessment tools.
- Networking with local, regional, state, and academic public health partners.
- Provide technical assistance and training to other health department staff.

Potential Projects

Surveillance Chatham County Community-based Cohort Assessment Activity

One of the fellow's primary responsibilities will be to oversee Chatham County's novel community-based cohort assessment.

Background/Rationale:

Like counties across the state and non-profit hospitals nationwide, Chatham is required to conduct a community health assessment (CHA) every three to four years. In previous cycles, Chatham has recruited a unique sample of households each cycle and conducted household surveys only in years the CHA took place. Beginning in 2018, Chatham will recruit a representative sample of residents and follow them over time to see how their health-related needs, preferences, and outcomes change. This is a new approach to community assessments, as we have found no evidence of a community utilizing a cohort design as part of their CHA process, and believe it could have broad utility for communities across the country. Through this approach, we will be able to follow the same residents over time and collect data more frequently, gaining access to new and more timely data to inform initiatives and assess impacts of policy and built environment changes on population health.

The community-based cohort assessment is also coming at an opportune time for Chatham County. With large-scale developments underway that will double the size of the county's population in the coming decades, the county is currently completing its first Comprehensive Plan, which lays out a vision for the county over the next 25 years. This plan includes several strategies to promote health and equity, centering around the health priorities that are determined through the CHA process. As this development becomes a reality and these Comprehensive Plan strategies are implemented, it will be important to monitor their impacts on health. The community-based cohort assessment will allow us to assess these health impacts.

Fellow's Role:

The fellow will have the opportunity to be an integral part of this unique process in its infancy and gain invaluable applied epidemiology experience while working alongside experts in study design methods and community-based assessments.

The fellow will work with mentors, the cohort assessment's Scientific Advisory Committee, and Public Health Department staff to carry out all aspects of the assessment, including reviewing and revising the study protocol and developing surveys. Furthermore, the fellow will analyze data from the cohort and present findings to staff, the Chatham Health Alliance, and the Board of Health. The fellow will also explore opportunities beyond the CHA to utilize the cohort assessment, such as to support Epi Team surveillance activities and disease tracking. This surveillance activity will help the fellow to gain knowledge in several of the applied epidemiology competencies.

Surveillance Evaluation of the cohort assessment's ongoing sampling and recruitment methods Evaluation

With this new approach to community-based data collection comes important and exciting applied epi methods questions. For example, since this is an open cohort and intended to provide a representative view of the county over time, ongoing sampling and recruitment, as well as analysis, must account for issues like population change and loss to follow. The fellow will work with mentors and the Scientific Advisory Committee, which is made up of local PhD-level epidemiologists and public health experts, to evaluate the sample from the first wave of data collection and determine how future waves of recruitment should be conducted to ensure the cohort remains representative of the county population (and possible options for oversampling specific subpopulations). The fellow will also review data security measures and other ethical considerations in the protocol to ensure existing measures are appropriate.

Given the community-based cohort assessment will be in its early stages and the fellow will work alongside experienced epidemiologists and public health practitioners on its design and implementation, this is fellowship will be an ideal learning opportunity for someone looking to gain knowledge in surveillance, study design, and data collection and evaluation.

Major Project Impact of Social Determinants of Health on Prioritized Health Outcomes

Like many local health agencies across the country, the Chatham County Public Health Department seeks to implement upstream strategies to address the root causes, or social determinants, of adverse health outcomes. Because of this, the Chatham Health Alliance includes members from a range of sectors and backgrounds, and the upcoming CHA will explore issues beyond those traditionally considered when looking at health. That said, it is often unclear to what degree different social determinants affect health outcomes. For example, access to mental health services is a current health priority in Chatham County. Understanding the relationship between issues like poor housing, unemployment, safety, and social support on behavioral health outcomes in Chatham could help us to better design interventions and link residents to necessary services.

For the fellow's major project, s/he will look at the structural conditions that affect Chatham's new health priorities to determine which areas to target and utilize longitudinal data from the cohort and additional sources to begin to look at effects of interventions. This project will rely on collaboration with many community partners and yield knowledge that can help the broader community understand the collective impact of its work. The fellow will also design surveys that dig deeper into these issues to better understand the needs of Chatham residents. Based on the findings of this work, the fellow will make recommendations to the Chatham Health Alliance on strategies that could have broad impact on important health issues in the county.

Additional Project All-Hazard Plan for Emergency Preparedness

Over the next 1-2 years, Chatham County aims to develop an all-hazard plan for emergency preparedness. This plan will streamline the current preparedness plans and help the Public Health Department to better follow appropriate procedures during an emergency event. The fellow will be involved in this process and work with local and state preparedness staff to develop a robust yet user-friendly plan.

Additional Project Epi Team Strategic Plan

The Chatham County Epi Team recently developed a strategic plan, which is updated annually. The fellow will work with the Epi Team chair to facilitate the strategic planning process and the broader Epi Team and community partners to implement the elements of the plan. These elements may include:

- Developing manuals for responding to communicable disease outbreaks based on existing resources.
- Assessing emerging public health threats, such as coal ash and fracking.
- Utilizing the cohort assessment to inform Epi Team initiatives.
- Aligning emergency preparedness and Epi Team activities.

Preparedness Role

Since the fellow's supervisor serves as Preparedness Coordinator for the Public Health Department, the fellow will be intimately involved in emergency preparedness activities and have ample opportunity for hands-on training. This could include:

- Designing and participating in tabletop and/or full-scale exercises.
- Revising and updating plans.
- Leading trainings with staff on emerging health issues and epidemiologic methods for those without a background in epidemiology.
- Serving on Chatham County's Epi Team.
- Participating in disaster preparedness activities.
- Providing surge capacity in the event of a disaster.
- Overseeing a call-down drill.
- Attending local, regional, and statewide preparedness meetings.
- Assessing environmental health threats, both natural and man-made.
- Any other preparedness activities in which the fellow is interested.

Additional Activities

To ensure the fellow has the opportunity to explore the many facets of local public health, we will continuously seek ways for the fellow to gain new experiences. Potential activities include:

- Attending Chatham Health Alliance sponsored events and meetings.
- Shadowing public health staff.
- Utilizing GIS software to map data.
- Attending Board of Health meetings.
- Making presentations to community members.
- Participating in environmental health assessments and studying local health issues, such as tick-borne illness.
- Planning and attending staff meetings.

Mentors

Primary

Jess Edwards PhD, MSPH

Research Assistant Professor

Secondary

Michael Zelek MPH

Health Promotion and Policy Division Director