Infectious Diseases, Injury

NC Department of Health and Human Services, Division of Public Health- Epi and Injury Section

Raleigh, North Carolina

Assignment Description

The Chronic Disease and Injury (CDI) and Epidemiology (epi) Sections of the NC Division of Public Health (DPH) are committed to providing an exceptional, well-rounded experience for a CSTE/CDC Applied Epidemiology Fellow. As a national leader in public health, we have a strong history of hosting CDC Prevention Specialists, UNC-Chapel Hill public health students, student interns, and Applied Epidemiology Fellows. This assignment will allow a Fellow to develop applied epidemiology competencies under the guidance of experienced mentors (one who has mentored seven EIS officers and one who has mentored 6 past CSTE fellows and was CSTE Outstanding Mentor of the Year in 2013) by engaging in both narrowly-focused and cross-cutting projects in injury epidemiology, with opportunities to gain experience in chronic disease epidemiology, maternal and child health, environmental public health, and public health preparedness.

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 infectious disease or injury epidemiology. These projects will involve the Fellow with staff across the Section, DPH, and from other states and CDC. Projects provide opportunities to present at national/state conferences and submit manuscripts to peer-reviewed journals. The Fellow will have opportunities to present to a wide range of audiences, learn how to communicate data/public health information effectively to difference audiences, improve public speaking skills and present work to state advisory boards and will be mentored in handling data/technical assistance requests (e.g., from public, legislators, and media). Mentors are very willing to work with fellows to develop projects within fellows' specific areas of interest or to help facilitate relationships with other partners/colleagues that will lead to these types of projects.

Mentors will also assist in pointing out aspects of current or proposed public health policies for which epidemiologic and other surveillance data can help drive/support these policies.

Day-to-Day Activities

Day-to-day activities will primarily depend on the nature of the project, experience and maturation of the Fellow. Initially, day-to-day activities will be strongly linked to one or more of the mentors as the Fellow gets oriented and acquainted to the programs and projects. As the Fellow develops capacity, more independent oriented activities will be expected. If new areas or projects are started, the mentors will work with the Fellow to get oriented and will check in to ensure progress toward reaching competencies is made. Communicating with past Fellows might illuminate anticipated daily activities over the course of two years. We would encourage potential applicants to reach out and speak to past NC CSTE Fellows about their experience. We can provide a contact list.

Potential Projects

Surveillance Activity **Understanding Substance Use in NC**

This project will work closely with various data sources to provide public health data analytic tools and expand the surveillance around substance disorders. Working with partners in the Division of Mental Health & Substance Abuse Services, this project will examine NC treatment services and other treatment services related data. In addition, we will partner with the NC Harm Reduction Coalition and conduct focus groups with current and recent users about their knowledge, attitudes and beliefs around health information and risk factors associated with use (HIV, Hep C and overdose). In addition, every year SAMHSA conducts National Survey on Drug Use and Health (NSDUH) about drug use and consumption. This surveillance activity would help develop a series of drug use profiles for NC based on this population-based data. Additional data sources, such as Behavioral Risk Factor Surveillance System (BRFSS) and Youth Risk Behavioral Survey (YRBS) will also be assessed and used to develop additional profiles of injectable drug use by NC adults and youth. Fellow will work with existing CSTE working group on substance abuse to help establish public health indicators. Choice of surveillance systems will depend upon the Fellow's interests and competencies. Several other options are also possible and can be arranged as deemed appropriate.

Surveillance Evaluation **Utilizing Emergency Department data to understand injectable drug use**

NC-DETECT is a state-wide emergency department surveillance system with near real-time data. Only recently has the state started to utilize this system for active surveillance of drug overdoses. This project will evaluate the use of this system and compare the 'real-time' data to the 'cleaned-administrative' dataset that typically gets created and developed at the end of a calendar year. Law enforcement and community coalitions are seeking more timely and current data in order to respond to the health problems associated with injectable drug use. Using the web-based NC DETECT portal, data will be examined and compared to the final 'cleaned' administrative file at the end of the year. Authorized community users will be interviewed about their use of the system for prevention. Community groups and others will have an opportunity to share what they would ideally need from this system that can be shared at the county level under the current policies. With a slightly different focus this project could serve as major project.

Major Project **Injection Drug Use in NC**

NC had over a 1,600 unintentional medication and drug deaths in 2016. While we know a fair amount about these deaths in terms of the types of drug used, we know much less about the manner in which they were taken (e.g. injected, snorted, swallowed). Likewise, acute hepatitis C rates have increased four-fold in the past five years. Interestingly, other markers of injection drug use have also dramatically increased such as infectious endocarditis and sepsis. Injectable drug use is commonly associated with heroin and other drug use. Using injectable drugs puts people at risk for not only infectious diseases such as HIV and Hepatitis C but also drug overdose. This project will be working closely with the communicable disease branch and injury branch to develop a surveillance project which attempts to estimate the injection drug user population in the state. The State Center for Health Statistics (SCHS) and NC Office of the Chief Medical Examiner (OCME) and potentially EMS data are available to abstract as needed. Additional information (eg Controlled Substance Reporting System (CSRS) & law enforcement) will be gathered with substance disorders and prescription drugs histories to create a fuller picture of drug overdose deaths in NC. As NC moves to address and prevent future deaths, this study will provide an important contribution.

Surveillance Activity **NIH-funded research project with RTI International, UNC Chapel Hill and the North Carolina Division of Public Health.**

This NIH funded project involves partnerships with RTI International (primary investigator), UNC Chapel Hill and North Carolina Public Health to identify opportunities to screen and link person who inject drugs to care for infectious disease treatment for Hepatitis B and C as well as substance abuse treatment. The 5-year project, which began in September 2017, focuses in western North Carolina counties (Southern Appalachia). The fellow may have an opportunity to in the development of questionnaires and screening tools targeting injection drug users in the region as well as analyzing data on outcomes such as overdose, viral hepatitis, STDs and linkage to care.

Surveillance Activity **Chronic Hep C as a reportable condition**

Beginning in January 2017, chronic hepatitis C will became a reportable condition in North Carolina. The fellow will have an opportunity to evaluate the new implementation of this reportable condition. Furthermore, the fellow will work with communicable disease staff to produce the first hepatitis C prevalence estimates for the state.

Preparedness Role

Like all NC Public Health employees, the Fellow will be trained on Incident Command using federal FEMA curriculum. The Chronic Disease and Injury has a strong relationship with the Office of Public Health Preparedness and Response housed within the Epidemiology Section. If the Public Health Command Center is opened, based on need, requests will be made throughout DPH for volunteers to help manage the event. Staff with specialized skills might be sought to help provide expertise for specific operations. Section epidemiologists, including CSTE fellows, have helped during hurricanes, floods, H1N1, food-borne outbreaks, injury outbreaks (contaminated heroin) and other disaster events. Roles, tasks and length of detail will be negotiated with the Fellow. The past five CSTE Fellows have all worked short-term details and had positive experiences. In fact, Nicole (Standberry) Lee was detailed to help with H1N1 for a brief period in spring 2008, which led to a full-time position after her Fellowship. And Fellow Anna Austin worked on a salmonella outbreak in southern NC (Oct 2014).

Formal training in outbreak investigation is available, and the Fellow will engage in at least one field investigation with the Communicable Disease Branch. The Fellow will take the DPH-required public health preparedness classes and will be included in Public Health Preparedness and Disaster Epidemiology Working Group efforts (CSTE Disaster Workgroup). Some potential public health preparedness projects include analyzing data from post-hurricane community assessments to identify effects on acute injuries and chronic disease, and opportunities for involvement in response to emergency events like hurricanes.

Additional Activities

- Opioid Overdose as reportable condition.
- Surveillance Activity.
- Several states have made opioid overdose a reportable condition and what impact that would have on surveillance efforts. The fellow will have an opportunity to assess whether or not NC should consider opioid overdose a reportable condition and if so, what steps it needs to take to make happen. A report will be generated and for this activity.
- Evaluation of the 'Reach Back' system in NC.
- Surveillance Evaluation Project.
- NCHESS is NC's hospital emergency surveillance system which provides data to NC DETECT (NC's statewide ED data) was recently upgraded. In specific cases (and with clear authorization), it is possible to link to the NC DETECT cases back to medical record within the hospital system for additional medical information. Over the past two years the system was overhauled and a new NCHESS+Plus has been created with additional functionality. This project will evaluate the utility of this system to review potential injectable drug cases. Medical record reviews are considered the gold standard in terms of data quality. This quasi-

medical review function will be evaluated for potential public health purposes. With a slightly different focus this project could serve as major project.

Women's and Children's Health

- Working with the Child Fatality Task Force (a legislatively mandated group) to assess data needs, responding to data requests and developing specialized surveillance (e.g. designer drugs, study drug use, etc.).
- Developing epidemiologic reports that can be updated annually.
- Examining prescription drug use by youth.
- Infectious diseases (HIV and Hep C) among NC youth.

Mentors

Primary	Aaron Fleischauer PhD Chief Science Officer
Secondary	Scott Proescholdbell Epidemiologist