

**ID: 87735603**

**Injury, Injury - Drug Overdose - Host Site Description**  
**North Carolina Department of Health and Human Services**

**Assignment Location:** Durham, US-NC  
North Carolina Department of Health and Human Services  
Division of Public Health - Injury and Violence Prevention Branch

**Primary Mentor:** Katie McDaniel, MPH  
Injury Epidemiologist  
NCDHHS, Division of Public Health

**Secondary Mentor:** Mary Beth Cox, MPH  
Substance Use Epidemiologist  
NCDHHS, Division of Public Health

**Work Environment**

Hybrid

**Assignment Description**

Chronic diseases and injuries are responsible for approximately two-thirds of all deaths in North Carolina. The NC DPH's Chronic Disease and Injury Section, along with local health departments and other partners, works to reduce death and disabilities related to chronic disease and injury. This is accomplished through policy development and environmental changes that support healthy behavior and improvements in systems of care as well as through education, screening, direct medical service, and community engagement. The goal of the Section is to help North Carolina develop healthy and safe communities and health systems to prevent and control chronic diseases and injury, and to eliminate health inequities. This assignment will allow a Fellow to develop applied epidemiology competencies under the guidance of experienced mentors (one who was a former Applied Epidemiology Fellow) by engaging in both narrowly focused and cross-cutting projects in injury epidemiology, with opportunities to gain experience in communicable disease, chronic disease epidemiology, maternal and child health, environmental public health, and public health preparedness.

The CDI Section is committed to providing an exceptional, well-rounded experience for a CSTE Applied Epidemiology Fellow. As a national leader in chronic disease & injury prevention and control, we have a strong history of hosting CDC Prevention Specialists, UNC-Chapel Hill public health students, student interns, and Applied Epidemiology Fellows. All staff in the CDI Section as well as staff from the State Center for Health Statistics will be available for program orientation, technical assistance, and resource provision. The Fellow will be placed in the Injury and Violence Prevention Branch's (IVPB) Epidemiology Surveillance and Informatics (ESI) Unit within the Section and will have some limited administrative support from the Branch Program Assistant. The Fellow will be located in close proximity to colleagues in the Section and will have the opportunity to interact and communicate on a regular basis.

The Fellow will work on a series of projects including surveillance evaluations, data quality and improvement, and other special data studies, and will work on procedures for cleaning, managing, linking, and analyzing major sources of data related to injury and violence. The Fellow will assist in developing and evaluating case definitions, generating descriptive statistics, and communicating surveillance data to inform public health action. 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 injury or chronic disease epidemiology. These projects will involve the Fellow with staff across the Section, DPH, the Department, 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 different audiences, improve public speaking skills and present work to state advisory boards. The Fellow will also be mentored in handling data/technical assistance requests (e.g., from public, legislators, and media). Mentors are very willing to work

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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 will primarily depend on the nature of the project the fellow is currently working on, 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 with them about their NC AEF experience.

Within the context of COVID-19, staff have been slowly transitioning back into the office, though many are still working from home. The Fellow will be afforded all the necessary equipment and software to support working from home in a hybrid capacity. This includes VPN to ensure access to all secured files and data sources, SharePoint, Microsoft Teams, external microphone and/or camera, etc.

**Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow**

In addition to data from the NC Violent Death Reporting System (VDRS) and the NC State Unintentional Drug Overdose Reporting System (SUDORS), which are housed within IVPB, the Fellow will have access to major public health databases through the State Center for Health Statistics (SCHS), to other data within the Division (e.g., Women's and Child's Health), and from partners (e.g., Department of Public Instruction, Division of Medical Assistance, Division of Mental Health/Substance Abuse/Developmental Disability). These databases include BRFSS, YRBS, CHAMP (Child Health Assessment and Monitoring Program), Youth Tobacco Survey, NC-NPASS (North Carolina Nutrition and Physical Activity Surveillance System), hospital discharge data, mortality data, NC Violent Death Reporting System, NC Opioid and Substance Use Action Plan metrics and local actions data, NC's Controlled Substances Reporting System CSRS (state-mandated prescription drug monitoring program), NC-DETECT (emergency department data), NC EMS system, NC Department of Transportation (DOT) alcohol and fatal crash data, and the cancer and stroke registries. Access to GIS expertise and services is also available through the SCHS. IT Support personnel for the Division are housed on the campus. SAS, R, Epi Info, Power BI and ArcGIS along with MS Office suite are available for Fellows to use and there are user groups that the Fellow will have the opportunity to join to gain additional support with some of these software packages. Additionally, the Branch employs an injury informatician who would be available to provide direct guidance on SAS coding and analysis questions.

**Projects**

**Surveillance Activity Title: Expanding NC's Surveillance of Firearm Injuries**

*Surveillance Activity Description:*

With additional attention on firearm injury, suicide, and broader mental health crises in the state, there is increasing need for actionable and easily digestible data around injury and violence. Working with partners from the newly established NC Office of Violence Prevention, and the NC Violent Death Reporting System and the Comprehensive Suicide Prevention Program (both housed within IVPB), the Fellow will work to develop, implement, and routinize a surveillance and dissemination plan for firearm nonfatal and fatal injuries. Numerous existing SAS programs will need to be updated or created anew to enable our program to provide timely data, reports, and fact sheets. As part of this

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project, the Fellow can analyze additional fields to expand the use of fatal and nonfatal data sources and continue to explore opportunities for focused intervention and prevention efforts. Based on the focus of the project and the Fellow's interest, this project could serve as a surveillance evaluation or surveillance project.

*Surveillance Activity Objectives:*

The objective of this project will be to develop and routinize a data dissemination plan for surveillance of firearm injuries and deaths. Deliverables include data documentation, SAS programming, and dissemination products, as well as expanding analysis of collected data.

*Surveillance Activity Impact:*

This project will streamline data processing, resulting in improved timeliness and access to data for external partners. The project will result in improved efficiency and allow staff time to be reallocated to other Departmental priorities.

**Surveillance System Evaluation Title: Exploration of Forensic Testing for Alcohol (FTA) Data for Public Health Surveillance**

*Surveillance System Evaluation Description:*

Alcohol is a major factor in traffic crashes in North Carolina. The Forensic Tests for Alcohol (FTA) Branch works to reduce impaired driving via training for law enforcement officers, educational events, and other support services. The FTA program has been within the Division of Public Health for more than 20 years. FTA is primarily a law enforcement tool supporting detection, apprehension and prosecution of impaired drivers. FTA has sought to identify more public health prevention opportunities and more utilization of the data they collect for public health surveillance. FTA collects data from across the state as part of their \*Booze It and Lose It\* road campaigns. This system evaluation would assess the wide range of FTA data, and its quality, and make recommendations on its use and dissemination as public health surveillance.

*Surveillance System Objectives:*

This project will aim to evaluate FTA data with the goal of understanding data quality, representativeness and basic demographics. Key deliverables will include updated data dictionaries, a final summary report of findings, and recommendations for future surveillance efforts including data visualization.

*Surveillance System Impact:*

This project will help explore these historically unused data points to help better understand innovative ways to help use/disseminate data to reduce impaired driving.

**Major Project Title: Analyzing Behavioral Risk Factor Surveillance System Data for Injury and Violence Prevention: A Focus on Equity**

*Major Project Description:*

North Carolina has recognized racism as a determinant of health and the need to eliminate health disparities and achieve health equity among all racial and ethnic minorities and other underserved populations in the state. To help with moving from describing racial disparities to understanding how racism directly impacts different populations, the North Carolina Behavioral Risk Factor and Surveillance System (BRFSS) included elements from the reactions to race module for the first time in the 2021 survey. These data will be crucial to understand how North Carolinian's experience with racism impact risk behaviors as well as their overall health and well-being. BRFSS also includes many other elements related to injury and violence. In 2018, a question was added to the NC BRFSS to understand types of alcohol consumption, and a module was added to the 2021 survey related to binge drinking. Questions on chronic pain and alternative pain therapies were included which listed using alcohol or other non-prescription drugs (like marijuana) to

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manage chronic pain. In addition, a firearm module was included in the 2020 and 2021 surveys, then again in 2024 and 2025, containing questions on safe firearm storage practices.

For this project, the Fellow will analyze BRFSS survey results from these and other survey modules to assess the prevalence of these topics in the state. Survey results could be combined for questions asked across multiple years to carry out more in-depth analysis into subgroups most impacted as well as to assess relationships with various health outcomes associated with those experiencing racism, chronic pain, and other factors related to injury in North Carolina. Findings from BRFSS analysis will be used to update and expand public facing IVPB data products using the BRSS data. The Fellow will compile and analyze trend data and disseminate this information to community partners in the form of factsheets, presentations, and/or a Power BI dashboard to visualize these data. The Fellow will also have the opportunity to expand existing injury dashboards, such as the violent death, overdose, and alcohol dashboards, to incorporate behavioral information from BRFSS to help tell a more complete story of injury and violence in NC. Depending on the Fellow's interest, this could serve as a major project or a surveillance activity.

*Major Project Objectives:*

The objective of this project is to leverage the existing data on behavioral and health outcomes related to injury and violence that are available in the BRFSS. Deliverables of the project will include updated data dissemination products as well as incorporating BRFSS indicator metrics into existing and new data dashboards.

*Major Project Impact:*

Inclusion of data on health behavior alongside health outcomes data will provide a more complete story of the burden of injury and populations most impacted. This context is useful with understanding and acting to improve health inequalities, a primary goal of the ESI and NC DHHS more broadly.

**Additional Project #1 Title: Place Matters: Exploring Location of Injury Data**

**Project #1 Type: Surveillance Activity**

*Project #1 Description:*

Place has been an important aspect of community health since John Snow first mapped London's cholera outbreak in the 1850s. People living just a few blocks apart may have vastly different health outcomes and life expectancy based on where they live. Traditionally, injury surveillance has focused on the injury burden at the state and county level, and there is a need to expand analysis of injuries across lower geographic areas. Surveillance efforts also frequently utilize county of residence, though many injuries may occur far from the home; NC's death certificate data now includes information on where the death occurred. The ESI Unit geocodes provisional death certificate data on a monthly basis (both residency information and location of death), however due to capacity, most analysis of the geocoded data have been for special projects rather than ongoing surveillance of injury at these lower levels. This project would focus on analyzing those geocoded death certificate data across injury types. Additionally, the project will link indicators identified from the US Census data and other sources to help understand shared risk and protective factors and other social determinants of health across various types of injuries. This project will help implement a routine and/or automated process analyzing data at these lower geographic levels and establishing processes for disseminating information to support a place-based public health response to increases in injury burden.

*Project #1 Objectives and Expected Deliverables:*

The primary objective of this project is to expand the capacity of the ESI Unit to conduct injury surveillance activities at the sub-county level. The Fellow will help to establish processes for incorporating data on social determinants and shared risk and protective factors into ongoing surveillance activities, including dashboards and other public facing data products.

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*Project #1 Impact:*

This project will help build on place-based analyses within the Unit to better inform evidence-based prevention strategies across the state as well as a more focused public health response. The project will also expand the Branch's ability to provide a more equitable interpretation of surveillance data.

**Additional Project #2 Title: Suicide Data Dashboard Expansion**

**Project #2 Type: Surveillance Activity**

*Project #2 Description:*

North Carolina Division of Public Health is one of 24 state health departments funded through CDC's Division of Injury Prevention to implement a Comprehensive Suicide Prevention (CSP) program. This program utilizes data to track trends in suicide death and suicidal behavior, identify disproportionately affected populations with increased risk of suicide, and understand contributors to suicide and suicidal behaviors. The North Carolina Violent Death Reporting System (NC-VDRS), the gold standard for violent death data, has a data dashboard that displays basic trends and demographics for violent deaths, including suicide. The Fellow will develop an expansion to the NC-VDRS data dashboard, using Power BI, to include additional suicide metrics focusing on veteran and rural populations. The expanded dashboard will serve as a tool to inform suicide prevention efforts among disproportionately affected populations.

*Project #2 Objectives and Expected Deliverables:*

The primary objective of the project is to develop data processing procedures and an expansion of the existing NC-VDRS data dashboard to improve the ability to monitor, interpret, and act on suicide surveillance data. Intermediate deliverables would include a restructuring of the existing database that feeds the dashboard, data visualizations for the dashboard for disproportionately affected populations (veteran and rural), and then a final data dashboard.

*Project #2 Impact:*

This project would result in a tool to improve suicide surveillance among disproportionately affected populations. The expanded dashboard will help to better understand and monitor the burden of suicide in NC and serve as a tool to observe the impact of state efforts around the CSP program.

**Additional Project #3 Title: Understanding the Public Health Impacts of Motor Vehicle Injury**

**Project #3 Type: Surveillance Activity**

*Project #3 Description:*

Motor vehicle and transportation (MVT)-related deaths are the second leading cause of injury-related mortality in North Carolina and a major source of nonfatal injuries. The societal and human costs are substantial, underscoring the need for effective prevention. For this project, the Fellow would collaborate with partners at NC DETECT, the syndromic surveillance system in North Carolina, to explore and develop case definitions for alternative modes of transport, including e-bike and e-motorcycle. The Fellow will compile and analyze trend data and disseminate this information in the form of a quarterly surveillance report, factsheets, presentations, and/or a dashboard to local health departments and other key MVT-related injury prevention partners. Based on the Fellow's interest, this project could be expanded to include analyses of the intersection of MVT-related injury and alcohol. Depending on the Fellow's interest, focus of the project, and abilities of the Fellow, this could serve as a major project or a surveillance activity.

*Project #3 Objectives and Expected Deliverables:*

The primary objectives of this project will be to develop data processing procedures and quarterly surveillance reports focusing on MVT-related injury. Deliverables include data documentation, SAS programming, implementing new and existing MVT-related case definitions into a quarterly surveillance report, and data dissemination.

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*Project #3 Impact:*

This project will enhance capacity in MVT-related injury surveillance. It will also expand upon and improve existing data products, resulting in more timely reporting on MVT-related injury trends.

**Additional Project #4 Title: Internal Injury Trends Data Dashboard Development**

**Project #4 Type: Surveillance Activity**

*Project #4 Description:*

The IVPB ESI Unit monitors a variety of injury and violence related topics, including unintentional falls, motor vehicle injuries, overdose, firearm injuries and other forms of violence, to name a few. There is a need more for timely access to data across injury topics to monitor trends of injury morbidity and mortality and act in a timely manner to changes in injury burden. As part of this project, the Fellow would develop an internal data dashboard using Power BI to monitor trends in injury and violence morbidity and mortality in North Carolina. This would be extremely useful when identifying significant increases or decreases in injury trends by topic, year, county, and among specific populations. The dashboard would serve as a tool to make surveillance data accessible and easy to share with Department leadership and other partners to inform prevention and intervention activities. Depending on the Fellow's interest, this could serve as a major project or a surveillance activity.

*Project #4 Objectives and Expected Deliverables:*

The primary objective of the project is to develop data processing procedures and an internal data dashboard to serve as a tool to improve the ability to monitor, interpret, and act on injury surveillance data. Intermediate deliverables would include databases structured to feed a dashboard, data visualizations for the dashboard for various injury topics and populations, and then a final internal data dashboard.

*Project #4 Impact:*

This project would result in a tool to improve the timeliness and transparency of injury surveillance data across injury topics and injury data sources. The tool would allow IVPB to easily share injury trend data with DPH leadership to support data informed decision and the ability to act on data.

**Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)**

Like all NC Public Health employees, the Fellow will be trained on Incident Command using the federal FEMA curriculum. If the Public Health Command Center is opened, based on need, requests will be made throughout DPH for volunteers to help manage the situation. Staff with specialized skills might be sought to help provide expertise for specific operations. The Fellow will take the DPH-required public health preparedness classes. 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. The Branch and the Chronic Disease and Injury Section maintain a strong relationship with the Office of Public Health Preparedness and Response with the Epidemiology Section, who are leading the State's COVID-19 response and other response efforts and will help ensure the Fellow will be afforded an opportunity to engage in response efforts.

Section epidemiologists, including CSTE fellows, have helped during hurricanes, floods, H1N1, food-borne outbreaks, injury outbreaks (contaminated heroin) and other disaster events. The past 11 NC CSTE Fellows have all worked short-term details and had positive experiences.

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Roles, tasks, and length of detail will be negotiated with the Fellow and mentors. We will ensure that while the Fellow has the opportunity to gain experience from and contribute to important response efforts that serve as a once in a career opportunity, that their primary focus is on injury and that they will be given the time needed to work on their identified projects in addition to participating in response efforts.

**Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)**

Leadership within the Branch and Section maintain a strong relationship with the Epidemiology Section and will ensure the Fellow will engage in at least one field investigation with the Communicable Disease Branch. Other opportunities for cluster and outbreak investigations will also be explored. Previous fellows have helped to review data on potential overdose clusters using NC DETECT syndromic surveillance data. Mary Beth Cox, secondary mentor, and Scott Proescholdbell, the IVPB Epidemiology, Surveillance, and Informatics Unit Manger have been actively involved in Department efforts to establish a framework to respond to overdose and suicide clusters, as well as other types of injury events. Formal training in outbreak investigation is also available.

Roles, tasks and length of detail will be negotiated with the Fellow and mentors. We will ensure that while the fellow has the opportunity to gain experience from and contribute to important response efforts that serve as a once in a career opportunity, that their primary focus is on injury and that they will be given the time needed to work on their identified projects in addition to participating in outbreak response.