

ID: 35818185

Injury - Host Site Description

New York State Department of Health

Assignment Location: Albany, US-NY
New York State Department of Health
Bureau of Occupational Health and Injury Prevention

Primary Mentor: Michael Bauer, MS, BS
Bureau Director / Epidemiologist / Research Scientist 5
New York State Department of Health

Secondary Mentor: Leah Hines, MPH, BS, AS
Epidemiologist / Research Scientist 3
New York State Department of Health

Work Environment

Hybrid

Assignment Description

The Fellow will be assigned to the Bureau of Occupational Health and Injury Prevention (BOHIP) where the primary mentor, Mr. Michael Bauer, MS, is the Bureau Director, an epidemiologist, and previous Section Chief of Epidemiology and Surveillance, and the secondary mentor, Ms. Leah Hines, MPH, is the lead injury epidemiologist and the Head of the Injury Epidemiology and Surveillance Unit. A third mentor, Jancarlos (JC) Guzman, MPH is a graduate of the Council of State and Territorial Epidemiologists Applied Epidemiology Fellowship (2025) and now an epidemiologist within BOHIP. BOHIP is responsible for conducting ongoing surveillance and epidemiology, and developing, implementing, and evaluating injury prevention programs locally and statewide. BOHIP actively supports local injury prevention programming through staff training, provision of data for community health assessment and priority injury selection, distribution of material for implementing prevention activities, and implementing and evaluating injury prevention projects on the state and local level. BOHIP would provide an excellent opportunity for a fellow to learn the practice of injury epidemiology. The fellow would be involved in data surveillance and analysis, data management, and the programmatic activities involved in the day-to-day running of a successful injury prevention bureau within a large state health department.

BOHIP maintains an injury surveillance system to describe the causes of injury and at-risk populations in New York State (NYS). The system relies on several data sources to identify injury-related deaths, hospitalizations, and emergency department visits. These data sources include the NYS Vital Statistics Death File (VS) and NYS Hospital Discharge Data System (Statewide Planning and Research Cooperative System, or SPARCS). Each year, approximately 10,000 deaths, 200,000 hospitalizations, and 1,450,000 emergency department visits to injury are captured by these surveillance systems. These data systems offer the fellow excellent opportunities for analysis.

There are several programs within BOHIP that offer potential areas of exciting research for the fellow. BOHIP is funded by the Centers for Disease Control and Prevention for the Core State Injury Prevention Program and the New York Violent Deaths Reporting System (NYVDRS), and by the Governor's Traffic Safety Committee for the Integrating Neighborhood Level Data into the Crash Outcome Data Evaluation System (CODES) and the NYS Traffic Safety and Public Health Program. The funding greatly increases the BOHIP ability to understand the burden of unintentional and intentional injuries in NYS. NYVDRS collects facts from death certificates, coroner/medical examiner reports, law enforcement reports, and toxicology reports into one linked database to provide information about the "who, when, where, and how" from data on violent deaths and provides insights about "why" they occurred. The CODES project matches individual records from the NYS Department of Motor Vehicles Police and Motorist Accident Reports to the NYS Department of Health Hospital Discharge database (SPARCS), Trauma Registry Data, and emergency medical services

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database (Pre-Hospital Care Reports or PCR). These linked databases create a full picture that describes what occurs before, during, and after a crash and are critical to accurately determining the effectiveness of highway safety and injury control initiatives. There are also many other data sets not housed within the BOHIP but would be available to the fellow as potential research areas. These sources of data include the Behavioral Risk Factor Surveillance System (BRFSS) and data from the NYS regional poison control centers.

BOHIP works in a collaborative, team environment, which strengthens and supports much of the work the Fellow will do independently. With ten epidemiologists, one of which is a graduated CSTE Applied Epidemiologist Fellow, and one statistician within BOHIP, the Fellow will have all the support they will need for a truly successful fellowship experience. The Fellow will attend bi-yearly meetings of the Injury Community Implementation Group, semi-annual BOHIP meetings, and bi-weekly meetings with Dr. Joyce Pressley at the Columbia University Mailman School of Public Health. BOHIP and Dr. Pressley have a long history of collaborative projects, and the Fellow will have the opportunity to engage in future epidemiological projects with Dr. Pressley. Additionally, the Fellow will have the opportunity to attend project specific meetings for the Core State Injury Prevention Program, the Crash Outcome Data Evaluation System, and the New York Violent Death Reporting System. The Fellow will be encouraged to attend webinars and subcommittee meetings hosted by the Council of State and Territorial Epidemiologists and the Safe States Alliance.

The Fellow will have their own analytic projects to work on daily. At the same time, the Fellow will be an essential team member of our epidemiology and surveillance teams, gaining experience in crucial injury and violence data systems, in-house data management, including data quality assurance and quality control, data linkage, and surveillance and analysis procedures. BOHIP regularly receives data requests from internal and external partners. The Fellow will assist in responding to these data requests. The Fellow will build statistical analysis and mapping skills. The Fellow will gain experience in data dissemination and public health communications.

The Fellow will be encouraged to attend external meetings of injury and violence prevention partners. These meetings would include, but are not limited to, the NYS Traffic Records Coordinating Committee, the NYS Highway Safety Symposium, the Columbia University Annual Science in Service to Safety Injury Prevention Symposium, and the Northeast and Caribbean Injury Prevention Network.

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

BOHIP has ten epidemiologists and one statistician that will be available to support the Fellow. Additionally, there are surveillance staff, programmatic staff, industrial hygienists, and administrative support staff available to the Fellow. The Fellow will have access to statistical software such as SAS, dashboard development software such as Tableau and mapping tools such as ArcGIS. The Fellow will have access to data from NYVDRS, CODES, Vital Statistics Death Files, SPARCS (hospitalizations and emergency department visits), NYS BRFSS, Poison Control Center data, and ED Syndromic Data.

Projects

Surveillance Activity Title: Surveillance of Injury and Violence Among Vulnerable Populations

Surveillance Activity Description:

BOHIP maintains a vast injury surveillance system that collects information on a range of injury and violence prevention (IVP) topics, including assaults, self-harm, motor vehicle crashes, falls, firearm-related injuries, drownings, etc. BOHIP is committed to examining data that affects vulnerable and disproportionately affected populations. The Fellow will analyze a topic of their choice, focus on a vulnerable population, and develop an internal dashboard to monitor trends in

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IVP morbidity and mortality in New York State. This will allow for more timely identification of increases or decreases of the selected injury topic by year, county, and among specific vulnerable populations.

Surveillance Activity Objectives:

The project's primary objective is to develop an internal data dashboard that would allow for more timely surveillance of BOHIP data while analyzing and interpreting data. Additional intermediate objectives would include developing databases to feed a dashboard and creating visualizations for the dashboard.

Surveillance Activity Impact:

To understand the burden of IVP topics and improve timeliness and dissemination of data.

Surveillance System Evaluation Title: Evaluating Data Completeness in the New York Violent Death Reporting System Post-Peak COVID-19

Surveillance System Evaluation Description:

New York State (NYS) has participated in the National Violent Death Reporting System (NVDRS) since 2015 (NYVDRS). This surveillance system combines death certificate data with coroner/medical examiner (C/ME) and law enforcement (LE) information to form a robust data set with over 600 unique elements. Completeness of this data is an important factor to consider, as missingness can lead to biased estimates in analysis and an inaccurate understanding of groups affected by violent deaths. The COVID-19 pandemic greatly impacted NYS C/MEs and LE agencies, significantly hampering data collection by the NYVDRS. Not only was less data from C/ME and LE collected, but the quality and completeness of the data were also impacted. The fellow will examine the categorical completeness by data source and the quality and completeness of the data submitted before, during and most importantly post peak COVID-19 pandemic. The fellow will assess differences in key geographic (e.g., county) and demographic variables (e.g., race/ethnicity, gender, educational attainment) by data source (C/ME and LE), including comparing coroner reports to medical examiner reports.

Surveillance System Objectives:

To better understand how NYVDRS data quality and completeness has improved post-peak COVID-19. The fellow will develop a report detailing their findings for use by NYVDRS staff. The report should include recommendations for improving future data collection.

Surveillance System Impact:

This project would offer insight into where information is coming from and to what C/ME and LE are providing. The results will inform NYVDRS epidemiologists as to the biases and usefulness of NYVDRS data collected post-peak COVID-19. This will enlighten all epidemiological studies, fact sheets, and other interpretations of the data used for public health action. The results will also identify potential avenues for improving future data collection.

Major Project Title: Bureau of Occupational Health and Injury Prevention Epidemiological Manuscript

Major Project Description:

The Fellow will be the lead co-author of a peer-reviewed epidemiology-focused manuscript using data from the Crash Outcomes Data Evaluation System, the New York Violent Death Reporting System, vital statistic death files, and/or the SPARCS (hospitalizations and emergency department visits) on one of the Bureau's focus areas. The Fellow will have the opportunity to pick from deaths and injuries related to motor vehicle crashes, firearms, suicides/self-harm, homicides/assaults, traumatic brain injuries, and adverse childhood experiences depending on their interests. The topic chosen must include a component related to disproportionately affected populations. The Fellow will be required to conduct a literature review and summarize the results, provide preliminary analysis, suggest appropriate statistical

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analysis methods, and drafting an Internal Review Board (IRB) application. The Fellow will present the results to epidemiological and biostatistical staff in the Bureau and determine, as a team, the appropriate methodology to complete the epidemiological study. The Fellow will be tasked with completing the study, presenting results at the CSTE Annual Conference, and writing the first draft of the manuscript. The Fellow will be tasked with incorporating all edits and developing the final manuscript to submit to a peer-reviewed journal.

Major Project Objectives:

The objective is to have the Fellow work on an epidemiological study from proposing the topic of interest, developing the methodology, summarizing the results, and writing the conclusion. The expected deliverable is a peer reviewed publication.

Major Project Impact:

The Fellow's work will provide a better understanding of a priority injury or violence topic, particularly as it relates to disproportionately affected population, and to disseminate the findings to inform public health action.

Additional Project #1 Title: Adverse Childhood Experiences (ACEs)

Project #1 Type: Major Project

Project #1 Description:

In 2016, the New York State (NYS) Behavioral Risk Factor Surveillance System (BFRSS) added an ACEs module on abuse (emotional, physical, and sexual) and household dysfunction (living with parental separation/divorce, household domestic violence, or household members' substance abuse, incarceration, or mental illness) for the first time. The Bureau of Occupational Health and Injury Prevention (BOHIP) analysis found that 59.3% of NYS residents had at least one ACE and 22.0% had three or more. Disproportionately affected populations including Hispanics and those who did not graduate high school reported higher ACEs scores. Health conditions related to high ACEs scores included self-reported poor mental health, depression, arthritis, obesity, disabilities limiting daily function, kidney disease, and asthma. Based on these results, BOHIP co-led a cross-sectional team that developed and disseminated a report "Understanding and Responding to Adverse Childhood Experiences in New York State" to inform local public health action. The 2021 and future NYS BRFSS surveys also included the ACEs module and an enhanced sample to allow county-level analyses. These newer surveys contain questions related to mental health and suicide ideation questions. The fellow will work with Bureau of Occupational Health and Injury Prevention (BOHIP) staff to analyze and disseminate findings around ACEs using the newer NYS BRFSS survey.

Project #1 Objectives and Expected Deliverables:

To analyze the NYS BFRSS surveys as they relate to ACEs, including examining disproportionately affected populations, and to summarize and disseminate the finding for public health action.

Project #1 Impact:

A better understanding of ACEs in NYS, both demographically and geographically. Findings will be disseminated to groups such as Prevent Child Abuse NY for public health action.

Additional Project #2 Title: Analyzing Motor Vehicle Crash Disparities Using CODES and the CDC's Social Vulnerability Index

Project #2 Type: Surveillance Activity

Project #2 Description:

Motor vehicle traffic injuries are a major public health problem. They are the leading cause of injury related death, second leading cause of injury related hospitalizations and third leading cause for injury related emergency department

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visits in New York State. On average, three New Yorkers die every day due to a traffic-related crash. The combined hospitalization and emergency department charges average \$1.1 billion, annually. To better understand motor vehicle traffic morbidity and mortality, the BOHIP uses data from the Crash Outcome Data Evaluation System (CODES). CODES is a database that matches individual records from the New York State Department of Motor Vehicles Accident Information System to the New York State Department of Health databases (including hospitalizations and emergency department visits). The CODES database provides medical and financial outcome information about injuries that occur as a result of motor vehicle crashes.

The linked databases create a full picture that describes what occurs before, during, and after a crash. For example, information is available on whether the individual wore a safety belt before the crash, time and location of the crash, medical problems and treatment at the crash scene, the length of time for the crash victim to be transported from the crash scene to the hospital, clinical diagnoses and medical procedures performed at the emergency department, length of hospitalization, and total charges. In addition to these fact sheets, CODES is used to conduct studies that examine the incidence, risk factors, and societal costs for traffic crashes and injuries.

The fellow will use CODES data as well as the CDC's Social Vulnerability Index (SVI) to assess how social determinants of health impact injury severity, fatalities among New York State's most vulnerable populations.

Project #2 Objectives and Expected Deliverables:

The project's primary objective is to produce a report that highlights findings from the analysis and provides recommendations for interventions that may be implemented. Additional intermediate objectives include updating fact sheets and developing presentations to disseminate findings.

Project #2 Impact:

Findings from this surveillance activity will help inform targeted interventions to improve road safety and reduce health disparities in New York State.

Additional Project #3 Title: Assessing Drowning Related Injuries Within New York State

Project #3 Type: Surveillance Activity

Project #3 Description:

Nationally, approximately 4,000 unintentional drowning deaths occur annually in the United States and demographic disparities exist. According to a 2024, CDC Vital Signs Report, compared with unintentional drowning death rates in 2019 (pre-COVID-19 pandemic), rates were significantly higher during 2020, 2021, and 2022, with highest rates among children aged 1-4 years, non-Hispanic American Indian and Alaska Native persons, and non-Hispanic Black or African American persons. National survey data revealed that 55% of U.S. adults have never taken a swimming lesson, and swimming lesson participation differed by demographic characteristics. There are over 7,400 public swimming pools and 1,300 public bathing beaches operated in New York State, and millions of patrons visit these bathing facilities each year. The fellow will use NYS hospital and emergency department discharge data from the Statewide Planning and Research Cooperative System (SPARCS) to create reports and fact sheets highlighting key findings.

Project #3 Objectives and Expected Deliverables:

The project's primary objective is to produce summary statistics and fact sheets on drowning that can be added to the BOHIP's web page.

Project #3 Impact:

Findings from this surveillance activity will be used to disseminate key information to the public related to drowning injuries across New York State.

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

Expertise and resources are in place in the Center for Environmental Health, where the Bureau of Occupational Health and Injury Prevention (BOHIP) is housed, to provide a comprehensive response for emergency and disaster preparedness events at the state level as well to regional and local county health departments and NYS communities. A core team of emergency response specialists leads multidisciplinary and volunteer groups in the Center to prepare for, respond to and recover from anticipated and unexpected events and collaborate externally with other agencies and the NYS Homeland Security and Emergency Services. The Fellow would have the opportunity to participate in the preparedness and response activities to environmental health threats through the collaborative approach of our center - taking part in public health responses, emergency management training exercises and functions, opportunities for disaster epidemiology, and site visits. Activities may include coordinated response planning for outbreaks and clusters, acts of terrorism, floods and severe weather emergencies, mass gatherings, disease surveillance, and drinking water contamination responses. Past events have included 9/11 World Trade Center; H1N1, H5N1, Zika, legionnaire's disease, pathogens, and aspergillosis; Superstorm Sandy and Southern Tier flooding; measles outbreaks in children's camps; exposure to waste anesthetic gases; Perfluorooctanoic acid (PFOA) in local town water supplies; toxic chemical spills; harmful algal blooms (HABs), radioactive emergencies and emerging contaminants (occupational exposure to diacetyl in butter substitutes, formaldehyde in keratin hair straighteners, nail salon worker health and safety, and occupational exposure to legionella in standing water) and Woodstock 50 planning. Time Allocated: 5% of their time and effort over the course of the fellowship.

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

Many states across the country, including NYS, experienced a significantly higher risk of gun violence during the COVID-19 pandemic. The fellow will use NYS health-related databases to determine whether individuals who were hospitalized or visited a NYS emergency department for gun violence related injuries form clusters based on demographic, geographic, and psychosocial factors. This can advance understanding of the heterogeneous nature of gun violence and identify patterns and subgroups that would benefit from gun violence prevention strategies. Time Allocated: 5% of their time and effort over the course of the fellowship.