

ID: 74010720

Chronic Disease, Occupational Health - Host Site Description

Georgia Department of Public Health

Assignment Location: Atlanta, US-GA
Georgia Department of Public Health
Epidemiology Division/Chronic Disease, Health Behaviors, and Injury Epidemiology Section

Primary Mentor: Moges Ido, MD, MS, MPH, PhD
Lead Scientist and Epidemiologist Supervisor
Georgia Department of Public Health

Secondary Mentor: Adile "Rana" Bayakly, MPH
Chief Epidemiologist
Georgia Department of Public Health

Work Environment

Hybrid

Assignment Description

The CSTE Fellow will be housed in the Chronic Disease, Health Behaviors, and Injury Epidemiology (CHIE) section in the Epidemiology Division, which is directed by the Georgia State Epidemiologist, Dr. Cherie Drenzek. CHIE is one of 6 Sections in the Epidemiology Program; the others include the Acute Disease Epidemiology Section (ADES), the HIV/AIDS Epidemiology Section, the STD Epidemiology Section, the TB Epidemiology Section, and the MCH Epidemiology Section. The mission of the Chronic Disease, Health Behaviors, and Injury Epidemiology Section (CHIE) within the Georgia Department of Public Health is to conduct comprehensive surveillance of chronic diseases, health behaviors, occupation and industry, and injuries. The section produces reliable and timely information from a health disparities lens to inform and guide public health practice for all Georgians.

The CHIE is dedicated to fulfilling its mission by using epidemiologic methods to:

1. Assess changes and trends in chronic diseases, health behaviors, and injuries, with a specific focus on identifying risk factors, disparities across diverse populations.
2. Evaluate changes and trends related to traumatic, violent, or occupational injuries to understand and mitigate disparities in injury occurrences and outcomes across various demographic groups.
3. Examine trends in health behaviors related to chronic diseases and injuries considering factors such as social determinants of health, geography, and cultural nuances.
4. Respond to cancer, suicide, and occupational health-related inquiries from public health professionals, ensuring that responses consider and prioritize the unique needs of diverse communities.
5. Provide technical support to county, public health districts, and private partners in responding to chronic disease and injury-related health problems, emphasizing disparities in the development and implementation of solutions.
6. Disseminate public health information, statistical reports, summaries, infographics, and educational materials related to chronic diseases, injuries, and risk factors with a focus on accessibility for all communities.
7. Conduct and support epidemiological research related to chronic diseases, health behaviors, and injuries, integrating social determinants of health to inform interventions and policies that address disparities.
8. Participate actively in public health emergency preparedness planning, response, and recovery based on requests within the DPH, ensuring that all activities are inclusive, responsive to diverse needs and contribute to equitable health outcomes during emergencies.

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The CHIE Section is comprised of several Surveillance Teams, Cancer Registry, Breast and Cervical Cancer Screening, Alzheimer Disease and Related Dementia (ADRD), Stroke Registry, Cardiac Registry, Lupus Registry, Occupational Health Surveillance, Violence Surveillance System, Trauma Registry, and the Behavioral Risk Factor Surveillance, The CSTE Fellow will have a range of project opportunities in each of these areas.

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

CHIE has access to many databases including: Georgia Cancer Registry (GCR), Georgia Coverdell Acute Stroke Registry (GCASR), Georgia Cardiac Registry, Alzheimer Disease and Related Dementia (ADRD) Registry, Georgia Violent Death Reporting System (GA-VDRS), Syndromic data focused on violence and mental health, Trauma Registry, Emergency Medical Services (EMS), Hospital discharge data; Emergency Room Visits, Vital Records death certificates; Georgia Behavioral Risk Factor Surveillance Data (GA-BRFSS), Pregnancy Assessment Monitoring System (PRAMS), Occupational Health Surveillance data, Unintentional Drug Overdose Reporting System data; and the Prescription Drug Monitoring Program data. There is statistical and data analysis, and programming support available from many of the MPH and doctoral level epidemiologists in CHIE, ADES, and HIV Epidemiology along with a growing community within DPH of persons (including other fellows) who meet regularly and discuss statistical analyses techniques and learning opportunities. The Fellow will have access to R, SAS, SAS Callable SUDAAN, Excel, EpiInfo, ARCGIS and ESRI training products, Tableau, Qualtrics, and more.

Projects

Surveillance Activity Title: Georgia Adult Elevated Blood Lead Case Follow-up and Employer Referral

Surveillance Activity Description:

Elevated Blood Lead Levels (BLLs) have the potential to cause adverse health effects in adults with chronic exposures, even at low levels of lead exposure. Exposure to lead can cause damage to various organs and systems including the kidneys, blood, reproductive and nervous systems. As a neurotoxin, lead can accumulate in soft tissues and in the bones, causing hypertension, cognitive dysfunction, adverse effects on renal function, and adverse effects on reproductive outcomes. The DPH Environmental Health Section Lead Poisoning Prevention Program is aimed at preventing lead exposures among children, but there is no DPH program to prevent adult lead exposures. Occupational exposures are the leading cause of elevated blood lead levels in adults. Adults who work in occupations such as battery manufacturing, recycling, lead smelters, construction sites (e.g., lead-based paint removal), firing ranges, ceramics, and scrap metal processing are at risk for lead exposure. Additionally, an estimated 24,000 or more children nationwide are unintentionally exposed to lead brought home by a parent from the workplace. Lead poisoning is mandated as a notifiable condition in Georgia. Pursuant to Georgia requirements, all blood lead level (BLL) screening test results must be reported electronically or in writing within seven days to the DPH Environmental Health Section.

The current case definition for elevated blood lead levels used by CDC is $\geq 3.5 \mu\text{g/dL}$; the average BLL for the general adult population is less than $1 \mu\text{g/dL}$. The state of Georgia participates in the National Institute for Occupational Safety and Health (NIOSH) Adult Blood Lead Epidemiology and Surveillance (ABLES) Program, which requires that the state provide NIOSH with BLL results $\geq 5 \mu\text{g/dL}$ for adults (16 years or older). This data is also used by the Georgia Occupational Health Surveillance (GA-OHS) Unit as part of its occupational health indicators to monitor prevalence and incidence rates of adult residents with elevated blood lead levels. Data from the NIOSH ABLES Program shows in year 2022, the prevalence rate of elevated blood lead among adults in Georgia (20.3 per 100,000 employed adults) was nearly two times higher than the national rate of 11.8. In 2022, Georgia had the third highest rate of elevated BLLs among the 21 states reporting ABLES data.² Since GA-OHS has been a part of the Georgia Adult Blood Lead Reduction Alliance (a partnership between the Atlanta-East, Atlanta-West, and Savannah Area Occupational Safety and Health Administration

(OSHA) offices, Georgia Tech OSHA Consultation Program, and GA DPH) to provide information, guidance, and access to training resources to help reduce occupational lead exposures and help workers understand their rights and the responsibilities of employers under the Occupational Safety and Health Act.

Surveillance Activity Objectives:

- Conduct follow-back investigations of resident incident cases age 16 years and older with elevated BLL of ≥ 25 $\mu\text{g}/\text{dL}$ reported to DPH within six months of exposure.
- Collect data via case follow-back survey to determine work-relatedness and identify high-risk lead exposure sites in Georgia.
- Contact the employer of cases that are determined to be work-related to recommend an on-site inspection by the Georgia Tech OSHA Consultation Program.
- Assist in the development and dissemination of educational materials and resources for workers and employers.

Surveillance Activity Impact:

The CSTE Fellow will help GA-OHS achieve the greatest program impact by implementing case follow-back activities and raising awareness through outreach and communications about occupational lead exposures. With support of the Georgia Adult Blood Lead Reduction Alliance, the fellow will help develop and disseminate reports, data summaries, and educational materials and resources to employers, workers, health care providers, and the public. Fellows will also have the opportunity to submit conference abstracts and develop manuscripts on occupational lead exposures. Prevention of adult occupational lead poisoning will be promoted through employer referral to the OSHA Consultation Program, which will: 1) identify physical hazards throughout the worksite, including lead exposure; 2) evaluate technical programs; and 3) review the safety and health program management system. Recommendations will then be made on how to correct physical hazards and improve both the technical programs and the safety and health management system in the facility.

Surveillance System Evaluation Title: Alzheimer's Disease and Related Dementias (ADRD) Registry Evaluation

Surveillance System Evaluation Description:

The selected fellow will have the opportunity to evaluate the Alzheimer's Disease and Related Dementias (ADRD) registry. Established by legislation in 2013, the registry was created to collect statewide surveillance data on Georgians living with dementia. Its purpose is to enhance awareness of ADRD, inform public health initiatives, and support state planning efforts.

Data for the registry is collected through partnerships with large hospitals and academic centers across the state. Specifically, eight memory assessment clinics (MACs) contribute data, which includes demographic information, co-morbidities, and caregiver details for individuals diagnosed with ADRD.

With guidance from surveillance epidemiologists, the fellow will conduct a comprehensive evaluation of the ADRD registry. This will involve performing literature reviews to assess the completeness of ADRD-related ICD codes applied within the MAC systems that feed into the registry. A key focus will be determining whether the ICD codes established in 2013 remain sufficient or require updates to ensure accurate case capture. Additionally, the fellow will evaluate data collection processes, assess the completeness of collected data, and identify variations in data fields across different MACs.

By analyzing ICD codes and registry data fields, this project aims to enhance the accuracy and comprehensiveness of ADRD surveillance, ensuring that the majority of cases within the state are captured to better inform public health planning.

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Surveillance System Objectives:

The fellow will:

- Conduct a thorough literature review of ICD codes used for ADRD diagnosis and compare them to those currently applied in the registry. Based on this analysis, they will provide recommendations on whether updates are needed.
- Evaluate the data collection process across MACs, assess data completeness, and identify variations in data fields.
- Provide recommendations to improve standardization and enhance data quality across MACs.

Surveillance System Impact:

A comprehensive evaluation of the ADRD registry will strengthen surveillance efforts, ensuring accurate statewide data collection. This, in turn, will provide critical insights for public health programs and state planning, ultimately improving dementia care and resource allocation.

Major Project Title: Addressing The Sustainability of The Georgia Coverdell Acute Stroke Registry

Major Project Description:

The Georgia Coverdell Acute Stroke Registry (GCASR) was established with the support of CDC grant to measure, monitor, and improve the quality of stroke care across the state of Georgia. The registry is one of the first five in the nation that were launched as pilots, and it has been supported by CDC funding for more than two decades. The GCASR has been able to recruit voluntarily acute care facilities treating more than 95% of stroke patients and has been leading the stroke quality improvement initiatives in the state. Improvements have been registry both in terms of quality of care and access to a quality stroke care.

Moreover, the registry has served to bring healthcare workers invested in stroke together and setup the Georgia Stroke Professional Alliance (GASPA). Understanding the importance of evidence based clinical care and the need to make it available promptly, the Georgia State Congress has passed the Georgia Coverdell Murphy Act which authorized the Georgia Department of Public Health to designate acute facilities as stroke centers at different level of the stroke systems of care.

Sustainability is a major issue in any program implementation, and due to policy and budgetary changes it is challenging to maintain programs even if they are effective. The stroke registry served both as a surveillance tool and a program for clinical quality improvement. Thus, it makes it difficult to determine whether and when it matures to sustain itself. Nonetheless, CDC has withdrawn its financial support to the Georgia DPH in 2024/25 fiscal year and most of the registry activities has been brought to a halt. It would be informative not only to the state of Georgia but also to other states and CDC to use this forced change as a setup to evaluate whether the program continued to sustain itself and the impact of budgetary changes.

Major Project Objectives:

The two major objectives this project are:

1. Evaluate sustainability status of the Georgia Coverdell Acute Stroke Registry activities
2. Assess the impact of budgetary changes on stroke quality of care among patients cared for by designated stroke centers

Upon completion of the project, it is expected the fellow will be able to produce summaries that will be shared with the Georgia DPH leadership, request to restore financial assistance from the state legislators. Moreover, the fellow will share the findings to colleagues in the epidemiology section of Georgia DPH, at stakeholders such as GASPA's meetings, and produce abstracts for presentation at scientific conferences.

Major Project Impact:

Public health is very good at evaluating effectiveness of interventions, assessing the short- or long-term impacts of projects and programs. However, we lack evaluating sustainability of interventions a priori or while in course. When is a program mature enough to withdraw financial or technical assistance? Should projects and programs be unplugged abruptly or gradually? Results from this study will help the Georgia DPH to learn about the evolution of the GCASR activities and make informed decision about its future course. Moreover, the findings will be highly informative to other programs across the nation and will add to the current body of scientific knowledge.

Additional Project #1 Title: Georgia Occupational Pesticide-Related Illness and Injury Surveillance

Project #1 Type: Surveillance Activity

Project #1 Description:

Although pesticides are generally beneficial, they can pose serious risk to human health and safety. Improper use can cause unintentional harms, including injury, illness, and death (poisoning). Occupationally exposed persons are at risk from exposure to more concentrated forms of pesticide. Workers who handle pesticides or pesticide-treated products risk illness arising from either chronic low-level pesticide exposure or a single acute pesticide exposure. Acute illness may be mild (e.g., headache, eye irritation, rash, difficulty breathing, or flu-like symptoms) or more severe (e.g., serious systemic illness, third degree burns, neurologic effects, and death). Chronic exposures can increase the risk of developing chronic diseases such as cardiovascular disease, prostate cancer, asthma, and Parkinson's Disease. Pesticide exposures are of concern in Georgia, with agriculture being a major industry in the state. There are over 42,000 farms in Georgia, with an average size of 235 acres. Additionally, Georgia has a large number of migrant and seasonal farmworkers. In 2022, Georgia was the nation's third highest user of the H-2A guest worker program, which brings migrant seasonal workers from other countries to work in U.S. agriculture. NIOSH has provided funding to states for the development and enhancement of pesticide-related illness and injury surveillance through its SENSOR Event Notification System of Occupational Risk (SENSOR) Pesticides Program. Georgia was awarded funds for this purpose in August of 2024 through an interagency agreement.

An average of 107 work-related pesticide associated illnesses and injuries are reported to the Georgia Poison Center (GPC) annually, an estimated 2 per 100,000 employed persons. For over a decade, the rate of work-related pesticide poisonings in Georgia has remained higher than the national rate. These numbers, however, grossly underestimate the actual number of pesticide poisonings occurring in the state. In order to identify and prevent hazards to the health and safety of employees and the general public, pursuant to O.C.G.A. sections 31-12-1, 13-12-2, and 13-12-8, the GA-OHS Unit proposes adding acute pesticide poisoning to the state notifiable disease reporting requirements. Data from physician reports can be used to better quantify and characterize pesticide injuries and illnesses in the state. If acute pesticide poisoning is successfully included as a state notifiable condition, physicians, physician assistants, nurse practitioners, and other medical providers will be required to report a confirmed or suspected pesticide poisoning to the GPC. The GPC will send reports of all workplace or occupational-related pesticide poisonings to the GA-OHS Unit to conduct further investigation of the cases. Interagency collaborations with the GPC, Georgia Department of Agriculture, DPH Environmental Health Chemical Hazards Program, and the University of Georgia Pesticide Safety Education Program will be utilized to support the work-related pesticide poisoning case investigations, outreach, and education.

Project #1 Objectives and Expected Deliverables:

Conduct follow-up interviews of acute occupational pesticide illness and injury cases based on the best practices recommended by NIOSH in Pesticide-Related Illness and Injury Surveillance: A How-to Guide for State-based Programs.

Conduct detailed analyses and surveillance of work-related pesticide poisonings to identify populations at high risk of exposure.

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Request investigation assistance from the Georgia Department of Agriculture and/or NIOSH for particular types of cases as needed (e.g., deaths, multiple affected persons, incidents involving new pesticide products, etc.)

Assist in the development and dissemination of data reports, educational materials, and resources for workers, employers, health care providers, and the public.

Project #1 Impact:

Surveillance can serve as an early warning system of pesticide exposure health effects. The CSTE Fellow will help monitor acute illnesses and injuries associated with pesticide use, which is crucial for identifying potential problems, populations at high risk, and for developing and evaluating risk reduction strategies. The aggregated pesticide poisoning data reports developed by the fellow will be shared with stakeholders, including the Georgia Department of Agriculture, Georgia Farm Bureau, and the State Office of Rural Health's Farmworker Health Program, with the goal of forming new partnerships, informing policies, and developing prevention programs that protect the health of Georgia residents and workers. Fellows will also have the opportunity to submit conference abstracts and develop manuscripts related to occupational pesticide poisonings.

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

There are many opportunities for involvement with epidemiologic emergency preparedness including: participating in active emergency responses (ex. monkeypox, HPAI, Ebola monitoring, etc); developing a plan to implement the ICS command structure for disease outbreak investigations; developing a plan for DPH first responder pre-deployment and just-in-time training as well as deployment and post-deployment health and safety monitoring; and developing standard operating procedures for responding to zoonotic disease outbreaks that affect the human and veterinary community in collaboration with other state and federal partners.

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

Our fellows are directly included in many cluster and outbreak investigations, there are many in Georgia and specific involvement may be led by the fellow's interests and other priority projects. Activities may include creating notifiable disease surveys and helping to create and provide disease guidance to our local health districts, partners and the public. They will work closely with our local health districts and may help conduct case investigations and assist in control activities. A fellow would be offered a leadership role in an aspect of the cluster or outbreak investigation that fits their skills and availability at the time. This might include overseeing monitoring for close contacts or managing a small team of individuals performing enrollment interviews.