ID: 35560170
Injury - Drug Overdose - Host Site Description
Baltimore City Health Department

Assignment Location: Baltimore, US-MD
Baltimore City Health Department
Youth Wellness & Community Health

Primary Mentor: Darcy Phelan-Emrick, DrPH, MHS
Chief Epidemiologist
Baltimore City Health Department

Secondary Mentor: Amanda Smith, PhD, MPH
Epidemiologist
Baltimore City Health Department

Work Environment
Hybrid

Assignment Description

The Fellow's assignment will be based in Overdose Prevention in the Division of Population Health and Disease Prevention. This Division is responsible for the agency's clinical services, STD/HIV prevention, communicable disease and outbreak control, overdose prevention, and field health services. The Fellow's work will focus on injury-drug overdose epidemiology. The Fellow will develop a comprehensive non-fatal and fatal overdose surveillance report and evaluate the agency's fatal overdose surveillance system. The Fellow will conduct an analysis of fatal and non-fatal overdoses among older adults. They will also create an internal dashboard for Opioid Intervention Team program data. The Fellow will be assigned to a short-term detail with the Acute Communicable Disease team to learn about outbreak investigations. In addition, the Fellow will participate in BCHD's emergency preparedness and response activities, including COVID response. The Fellow will be supervised and mentored by BCHD's Chief Epidemiologist, Dr. Darcy Phelan-Emrick (primary mentor) and mentored by Dr. Amanda Smith (secondary mentor). Dr. Phelan-Emrick leads the Office of Epidemiology Services ("Epi Services"), which is also where Dr. Smith works. This office is in the Division of Youth Wellness and Community Health. Epi Services provides epidemiology support to BCHD as a whole and focuses on department-wide reporting and surveillance. The Epi Services team is made up of five full-time staff - the Chief Epidemiologist, two epidemiologists (Dr. Smith, and a masters-level epidemiologist), and one Research Analyst I.

Day-to-day activities will include:
- Analyze confidential and surveillance data (e.g., fatal overdose data, non-fatal opioid overdose EMS data, autopsy data, vital statistics data, emergency department and inpatient hospitalization discharge data, etc.)
- Summarize data analysis findings in reports and dashboards, including visualizations and maps
- Review and fulfill data requests received from BCHD staff, media, Mayor's Office, etc.
- Meet with BCHD staff and partners to discuss data, epidemiology, monitoring, and evaluation
- Write program monitoring and evaluation plans for funding applications
- Identify public datasets for analysis
- Read journal articles and the news to stay up-to-date with developments in behavioral health and injury-drug overdose epidemiology
- Work on the activities and projects described in this application

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

The primary and secondary mentors will provide statistical and data analysis technical assistance to the Fellow during their regular meetings. In addition, other BCHD epidemiologists will help facilitate the Fellow's analytic work. Several databases will be used by the Fellow, including autopsy data from the Maryland Office of the Chief Medical Examiner, fatal overdose data from the Maryland Department of Health for surveillance and for overdose fatality review, death certificate data, non-fatal opioid overdose-related EMS data, hospital discharge data (emergency department visits and inpatient hospitalizations) provided by the Maryland Health Services Cost Review Commission, vital statistics mortality data, and syndromic surveillance data through ESSENCE. The Fellow will have software licenses for Stata, ArcGIS Pro, R, Power BI, Microsoft Office Suite, and Nitro Pro. The Fellow will have access to ArcGIS Online, the R Shiny platform, and the mySidewalk digital platform. Surveillance systems available to the Fellow will include BCHD's non-fatal opioid overdose surveillance system (funded by CSTE as Project SOON in 2017-2018), ESSENCE for syndromic surveillance, the Maryland Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance System (YRBS), and exposure to the National Electronic Disease Surveillance System (NEDSS) and BCHD's falls surveillance system built in partnership with Maryland's health information exchange, CRISP.

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Projects

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Surveillance Activity Title: Comprehensive Non-fatal and Fatal Overdose Surveillance Reporting

Surveillance Activity Description:
The Fellow will maintain and refine the monthly comprehensive overdose surveillance report for BCHD. This will involve working with several diverse sources of overdose data, including death certificate data, autopsy data, vital statistics data, emergency medical service (EMS) data, ESSENCE-based syndromic surveillance data, and emergency department (ED) and inpatient hospitalization claims data. It also will involve identifying additional sources of data for surveillance. The Fellow will regularly download surveillance data updates from data custodians, clean and append data, manage databases, analyze data, geocode and map data, and summarize key findings in a report. The goal of the refined report will be to inform agency overdose prevention efforts. The report will include information on fatal and non-fatal overdoses, demographics, substances involved, maps, trends over time, EMS calls for service, ED visits, and inpatient hospitalizations. The report will include a focus on disparities between groups for a variety of overdose-related outcomes. To inform continued development of the report, the Fellow will conduct a literature review and landscape analysis to identify best practices. They will also meet with BCHD staff to help identify additional surveillance data needs and potential ways to improve current overdose surveillance efforts. The report will be updated monthly. The Fellow will present the report to the city's Opioid Intervention Team and the Overdose Fatality Review team during their monthly meetings.

Surveillance Activity Objectives:
In the first year of the fellowship, the Fellow will refine the non-fatal and fatal overdose surveillance report for use by the city's Opioid Intervention Team, the Overdose Fatality Review team, and other stakeholders as requested. Deliverables include the report, statistical analysis code, oral presentations to the city's Opioid Intervention Team and the Overdose Fatality Review team.

Surveillance Activity Impact:
The expected public health impact of this project is improved access to fatal and non-fatal overdose information to inform decision-making. This project will produce a useful tool for the city's Opioid Intervention Team and the Overdose Fatality Review team for policy making, evaluation, and monitoring.

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Surveillance System Evaluation Title: Evaluation of Fatal Overdose Surveillance System

Surveillance System Evaluation Description:
Currently BCHD receives fatal overdose surveillance data from Maryland Department of Health (MDH) Vital Statistics Administration based on fatal overdoses reported by the Office of the Chief Medical Examiner. These data are utilized in regular reporting and presented to stakeholders to monitor fatal overdose trends over time, as well as observe trends of drugs found during autopsies. Since much overdose surveillance is focused on non-fatal overdose due to multiple intervention opportunities while a person is alive, the use of fatal overdose surveillance data typically highlights interventions that can occur upstream before overdoses happen. For example, data from a corrections brief conducted by MDH in 2014 cite that fatal overdose risk is higher for individuals following the first year of after release from incarceration (Risk of Overdose Death Following Release from Prison or Jail, MDH, 2014). The Fellow will conduct an evaluation of the current fatal opioid overdose surveillance system and make recommendations for improving it. They also will produce recommendations for potential evidence-based interventions. They will use guidelines from CDC, such as Updated Guidelines for Evaluating Public Health Surveillance Systems (MMWR, May 7, 2004 /53(RR05);1-11) and Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks (MMWR, July 27, 2001 / 50(RR13);1-35), as well as more recent resources that summarize best practices, such as Public Health Surveillance Systems: Recent Advances in Their Use and Evaluation by Groseclose and Buckeridge (Annual Review of Public Health, March 2017, Vol. 38:57-79). Methods described by CSTE in its 2015 four-part webinar series on public health evaluation will be utilized as well. The Fellow will engage stakeholders in conducting the evaluation. The Fellow will write a report summarizing the evaluation, findings, and recommendations. The report will be shared with stakeholders, and the Fellow will give an oral presentation to stakeholders summarizing the evaluation findings. The Fellow will also prepare an abstract for submission to a conference and will explore the possibility of submitting a manuscript to a peer-reviewed public health journal.

Surveillance System Objectives:
During the two years of the Fellowship, the Fellow will produce an evaluation report on current fatal overdose surveillance, with a focus on identifying areas for improvement by following best practice methodologies for surveillance system evaluations. Deliverables include the report, oral presentation to stakeholders, and conference abstract.

Surveillance System Impact:
The expected public health impact of this project is to understand and improve upon the current fatal overdose surveillance system. An improved fatal overdose surveillance system could lead to more informed decision-making regarding upstream interventions and fatal overdose prevention.

Major Project Title: Fatal and Non-fatal Overdoses Among Older Adults Analysis and Report

Major Project Description:
Recently, data published by the National Center for Health Statistics showed that drug overdose deaths have tripled among individuals aged 65 and over older in the past two decades in the United States (citation: Drug Overdose Deaths in Adults Aged 65 and Over: United States, 2000-2020, NCHS Data Brief No. 455, November 2022). Baltimore City is one of the few cities where the Area Agency on Aging is located within the health department; this creates a unique opportunity to utilize internal health data to inform older adult programming. The Fellow will conduct a literature review to gain knowledge on fatal and non-fatal overdose among the older adult population in the United States and Baltimore City. The Fellow will conduct an analysis to examine fatal and non-fatal overdose trends among older adults (aged 60 and over) in Baltimore City. The analysis will include data on fatal and non-fatal overdoses, demographics, substances involved, maps, and trends over time. Additionally, location data will be used to identify overdoses in older adult congregate settings (e.g., nursing homes, assisted living facilities). Understanding overdose risk in this subpopulation will improve our agency's programming and response, and provide potential prevention and intervention strategies for

behavioral health among older adults. The Fellow will write a report on their findings as well as present their findings to the BCHD Division of Aging. The Fellow may prepare an abstract for submission to a conference and explore the possibility of submitting a manuscript to a peer-reviewed public health journal.

Major Project Objectives:
During the two years of the Fellowship, the Fellow will complete an analysis and report to assess the epidemiology of overdose among older adults in Baltimore City. Deliverables include the report, maps, statistical analysis code, oral presentation to Division of Aging and overdose prevention committees (internal and external), conference abstract, possible peer-review publication.

Major Project Impact:
Overdose deaths among older adults have increased across the United States, and anecdotal reports point to a similar pattern in Baltimore City. The expected public health impact of this project is access to information on overdoses among older adults in Baltimore City to inform decision-making. This will allow for program planning, prevention, and intervention to address overdoses among older adults, particularly in congregate living facilities.

Additional Project #1 Title: Build an Internal Opioid Intervention Team Program Dashboard
Project #1 Type: Major Project

Project #1 Description:
The Fellow will conceptualize and build an internal Opioid Intervention Team program dashboard in either ArcGIS Online or PowerBI. This will be done through the analysis, visualization, and mapping of overdose-related program data. To inform development of the dashboard, the Fellow will conduct a literature review and landscape analysis to identify best practices for data dashboards. The Fellow will work with the Opioid Intervention Team to identify their requirements for the dashboard and conduct a review of all internal and external programs and data. The Fellow will regularly download data updates from data custodians, clean and append data, create and manage databases, analyze data, and geocode data. The dashboard will include maps and metrics related to several overdose-related programs (e.g., naloxone distribution, syringe disposal kiosks use, outreach attempts). An Opioid Intervention Team dashboard will improve program planning and response by providing a comprehensive overview of outcome and program data of different overdose response initiatives involved with BCHD. The Fellow will present on their finished dashboard to the Opioid Intervention Team and BCHD leadership.

Project #1 Objectives and Expected Deliverables:
During the second year of the Fellowship, the Fellow will create a comprehensive Opioid Intervention Team Program Dashboard that pulls in program data from numerous partners for ease of review and planning. Deliverables include the dashboard, maps, statistical analysis code, datasets, oral presentation to Opioid Intervention Team and BCHD leadership.

Project #1 Impact:
The expected public health impact of this project is improved access to overdose program data to inform decision-making. This project will produce a useful tool for the Opioid Intervention Team to inform decisions in policy making, allocation of resources, and evaluation and monitoring. It will pull together overdose program data all in one place. Currently these data are siloed and difficult to review at once.

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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)

The Fellow will participate as an entry-level epidemiologist in BCHD's public health emergency preparedness and response activities. They will complete the necessary trainings, including FEMA National Incident Management System (NIMS) Incident Command System (ICS) 100 and 200 courses, within 6 months of onboarding (estimated at 20 hours). The Fellow will become familiar with the epidemiology components of BCHD's emergency response plans and will participate in tabletop exercises, drills, related activities (estimated at 10 hours), and, if necessary, actual emergency responses. After receiving training, the Fellow will serve as the agency's on-call (nights and weekends) Infectious Disease Duty Officer for approximately 3 weeks per year. This is a duty assigned to all agency epidemiologists.

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

The Fellow will have a short-term detail with BCHD's Office of Acute Communicable Diseases (ACD) so the Fellow can gain experience in conducting outbreak investigations (estimated at 40 hours). The ACD team includes three epidemiologists, one of whom serves as the Director. The Fellow will join the ACD team as it progresses start-to-finish through the steps of at least one outbreak investigation. The Fellow will write a field investigation report and receive feedback on the report from the ACD team. The team will also expose the Fellow to NEDSS and other tools and resources used during their daily operations. Counts for selected notifiable conditions for Baltimore City are available at https://bit.ly/3J7rTmR.

Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation

The Fellow will update various portions of Baltimore City's COVID dashboard (https://coronavirus.baltimorecity.gov/), including COVID cases, deaths, hospitalizations, percent positivity, test volume, and CDC COVID Community Level (30 minutes per day). The Fellow will attend our agency's monthly COVID data meeting (1 hour per month). Depending on COVID public health burden and staffing, the Fellow may be trained to assist with conducting COVID outbreak investigations (estimated at 40 hours of training).

Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work

In their everyday work, the Fellow will examine disparities in health outcomes and risk factors by demographics, geography, and by other factors when data are available. Identification of health disparities is a key step in achieving health equity, according to the Robert Wood Johnson Foundation (RWJF) (citation: https://www.rwjf.org/en/library/research/2017/05/what-is-health-equity-.html). The Fellow will be involved with monitoring and evaluation of efforts to address health disparities. If the Fellow wishes, they may join the agency's Health Equity Committee. In terms of diversity, equity, and inclusion, the Fellow will learn about unconscious bias and addressing bias in the workplace. The Fellow will be encouraged to share their preferred gender pronouns with others. The Fellow will work with diverse set of colleagues and partners. The primary and secondary mentors will work with the Fellow to help them understand the reasons for medical and public health mistrust in Baltimore City and the role and effects of structural racism in the city's past and present.