

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

Assignment Location: Chicago, US-IL
Chicago Department of Public Health
Chronic Disease Prevention and Health Promotion

Primary Mentor: Emma Boylan, MS
Epidemiologist, Chronic Disease Prevention and Health Promotion
Chicago Department of Public Health

Secondary Mentor: Ajanta Patel, MD, MPH
Medical Director, Chronic Disease Prevention and Health Promotion
Chicago Department of Public Health

Work Environment

Hybrid

Assignment Description

In order to conduct their work, the Fellow will meet regularly with the mentorship team (primary/secondary mentors plus current AEF fellow, and Director of Epidemiology, Nik Prachand) to develop and progress the projects. The Fellow will conduct their data analyses on CDPH software and provide transparency to the methods, and ultimately collaborate with the Epidemiology team on data visualization and presentation.

The Fellow will need to develop relationships, with our introductions, to the staff at CDPH, as this will facilitate community outreach and understanding of community needs. An important responsibility of the Fellow's role will be responding to community requests for information about local health and its determinants. Many of these requests will be forwarded by project management staff working with CBOs and community health workers in the Community Health Response Corps, but they may also come from public data requests, meetings with community members, or other government entities. The Fellow will also develop relationships with academic researchers to advance our understanding and measurement of disparity and equity. The Fellow will be introduced to academic partners who are already instrumental to our work such as the C3, the ASPIRE Center, and the CAPriCORN research network; and will be supported to pursue other partnerships that advance their projects and professional goals.

The proposed projects align with CDPH's goals to maintain and improve our infrastructure for public health surveillance. Therefore, the Fellow will be asked to present their plans and work product to CDPH leadership and to provide substantive input to ongoing department-wide data infrastructure projects that support chronic disease surveillance. Because our work towards health equity is largely strategic, we are increasing our emphasis on written testaments to progress - printed reports of data and analysis, slide deck presentations, memos and briefs, etc. - and we will ask the Fellow to participate in creating visibility to his/her work. CDPH is a collaborative atmosphere, and in the time of COVID, staff have been asked to stay abreast of current updates. Therefore daily activities may include answering questions from our external partners or helping facilitate community engagement in COVID prevention. The Fellow should anticipate being logged into the Microsoft Teams and Outlook email daily for the duration of the work day and respond (as appropriately timely) to requests for assistance, updates, questions, etc.

The Fellow will work in the Office of Chronic Disease with direct support of the Office of Epidemiology. The support team includes Dr. Patel, Emma Boylan, MS, the current AEF fellow, and Director of Epidemiology, Nik Prachand, MPH. The Offices of Chronic Disease and Epidemiology have collaborated on this application and project proposals and will work collaboratively to develop the Fellow's projects and provide support and mentorship.

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

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

The Fellow will have access to the same analytic and productivity software as other CDPH epidemiologists including SAS, R, ArcGIS Pro, Tableau Server, and Office 365. The Fellow will also have the same access to surveillance data and other data sources relevant to chronic disease prevention and control that other epidemiologists have including raw Healthy Chicago Survey data; Illinois vital records, cancer registry, and hospital discharge data; CDPH GIS datasets; EMS data; internal program evaluation data; and both public and internal-facing versions of data posted to the Chicago Data Portal. The Fellow will have back-end access to the Chicago Health Atlas and the data posted there. As new data becomes available, for example the CAPriCORN EHR data described below, the Fellow will have the same access that Emma and the current AEF fellow have.

Projects

Surveillance Activity Title: Maintaining and improving the Healthy Chicago Survey

Surveillance Activity Description:

CDPH Office of Epidemiology conducts its own annual health survey, the Healthy Chicago Survey (HCS), which forms the basis of much of our office's chronic disease surveillance activities. The survey is designed to provide updated prevalence estimates for the city as a whole by demographic group each year, and for each of Chicago's 77 community areas every two years. The results of this survey are critical to our work in Chronic Disease, particularly for identifying health inequities across the city and for targeting the community outreach activities of the Community Health Response Corps. Our office provides annual feedback on survey questions related to chronic disease, health literacy and behavior, and social determinants of health. We have successfully advocated for additions to the HCS that support our program and align with national surveys, and both the current AEF fellow and Emma recently served on the steering committee for the 2023 HCS. The Fellow will work with their team of mentors and HCS lead epidemiologist Hannah Matzke MS, to make recommendations for the improvement of chronic disease, health literacy, and social determinants of health items on the HCS. These activities would occur for both the 2024 and 2025 surveys.

Surveillance Activity Objectives:

- 1) Work with Chronic Disease program staff to identify the data needs of their programs and the community members they are working with
- 2) Review and analyze existing HCS data and documentation to identify specific public health questions that cannot be addressed using currently available HCS data, or that are incomplete or out of date due to changing language or guidelines (e.g. cancer screening recommendations)
- 3) Identify validated wording for new or updated questions from relevant sources such as Healthy People 2030, CDC Chronic Disease Indicators, NHIS, or BRFSS
- 4) Synthesize findings into a list of requested new/updated/retained questions for submission to HCS leadership
- 5) With mentorship team, represent Chronic Disease data requests on future HCS steering committees

Surveillance Activity Impact:

Maintenance and continued improvement of the HCS, one of CDPH's most important sources of information about social determinants of health, prevalence of chronic diseases, and geographic and population health inequities. By optimizing the HCS as it relates to chronic disease, CDPH will have better information regarding risk factors and prevalence, as well as other issues of community importance. Updates to the HCS will produce better chronic disease surveillance.

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

Surveillance System Evaluation Title: Validating chronic disease indicators obtained from a federated network of EHR data

Surveillance System Evaluation Description:

As described in the section on host site agency partnerships, CDPH is currently working to establish a data sharing agreement with CAPriCORN, a federated network of EHR data from Chicago's major health systems. Once the data sharing agreement is established, our first step will be to validate the prevalence of chronic conditions from CAPriCORN against estimates from the HCS.

For this project, the Fellow will replicate the approach taken by researchers affiliated with NYC Macroscopic, an EHR data network, to validate EHR-based prevalence estimates against the NYC Health and Nutrition Examination Survey. The Fellow will work with CDPH epidemiologists and CAPriCORN staff to develop appropriate data queries and weights that reflect the population distribution of Chicago and the coverage of the CAPriCORN network. They will analyze the data to develop a hypertension indicator stratified by age, sex, race/ethnicity, and neighborhood and conduct validation analyses to determine whether these indicators are comparable to those obtained from the HCS.

This project will build on lessons learned from the current AEF fellow ongoing surveillance evaluation project. The current AEF fellow is comparing hypertension data availability, definitions, and coverage between the HCS, CDC MENDS, and population hypertension prevalence calculated by CAPriCORN affiliate researchers. Her work will inform us as to the best data source for different population health questions related to chronic disease, as well as any gaps. In the new validation study, we aim to learn whether EHR data can directly supplement prevalence estimates from the HCS for small populations. For example, we would like to be able to report separate prevalence estimates for individual ethnic groups that are currently collapsed into a single category for all Asian and Pacific Islander Chicagoans.

Surveillance System Objectives:

Objectives:

- 1) Develop and thoroughly document data queries that can be used within the CAPriCORN system to identify cases of hypertension and contribute to queries for other conditions or behaviors relevant to chronic disease
- 2) Collaborate with the mentorship team to develop a validation protocol based on the NYC Macroscopic validation and other relevant validation studies
- 3) Implement the validation analysis and develop an internal visualization and report of results
- 4) For indicators that can be validated, develop internal documentation and SAS code that can be used by other CDPH epidemiologists for EHR-based surveillance
- 5) Contribute to writing and analysis of deliverables as appropriate to validation results

Depending on validation results, additional deliverables may include contributions to internal and external methodology reports; published scientific articles; producing stratified analyses by age, sex, race/ethnicity, poverty level, community area, and SOGI status for distribution on the Chicago Health Atlas; or a data one-pager intended for Chicago Health Atlas users.

Surveillance System Impact:

Improvement of public health surveillance infrastructure is a national priority. There is widespread interest, in CDPH and nationally, in using EHR data as part of the solution but the data must be validated to be used. This validation project will build on the current AEF fellow surveillance evaluation to help us understand how EHR data can be used for public health planning and communication. Ideally, it may also help us report more nuanced data for smaller populations or for topics such as chronic disease management that are difficult to capture in surveys.

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

Major Project Title: Using EHR data to describe city-wide inequities in colorectal cancer treatment and mortality

Major Project Description:

The Fellow's major project will use CAPriCORN data to help us understand inequities in screening, treatment, and referral of Chicagoans diagnosed with colorectal cancer (CRC). Extensive research and surveillance evidence documents racial inequities between Black and white people across the continuum of CRC. Among these disparities, Black people diagnosed with CRC are less likely to be referred for appropriate cancer-directed treatment, which contributes to mortality disparities. However, the Illinois State Cancer Registry is an incidence-only registry that does not include information about cancer-directed treatment or comorbidities. As a result, we do not know how the presence of other chronic diseases may influence cancer care referral and outcomes for Chicagoans.

The Fellow will work with Emma Boylan, whose prior research focuses on CRC racial inequities, to develop CAPriCORN queries for CRC in Chicago and analyze the resulting data. We are especially interested in the prevalence of chronic comorbidities among Chicagoans with CRC, referral and receipt of optimal treatment, and opportunities to educate health care providers through our Advancing Health Literacy Project (AHL). Because the results of this analysis will apply only to Chicagoans with CRC and in contact with a health system, not to creating indicators for the entire Chicago population, this project can begin before the validation analysis is complete. However, the Fellow may also choose to validate the prevalence of being up to date on CRC screening among CAPriCORN records as compared to the HCS.

Major Project Objectives:

- 1) Collaborate with Emma and CAPriCORN staff to develop queries for people diagnosed with CRC, cancer characteristics, cancer-directed treatment, and comorbidities
- 2) Summarize query data sets in terms of demographics, prevalence of common chronic diseases among people with CRC, and types of treatment received
- 3) Apply lessons learned from validation analysis project to compare prevalence of being up to date with CRC screening in the HCS and CAPriCORN
- 4) Contribute to a scientific manuscript and a data report describing results
- 5) Collaborate with AHL, Community Health Response Corps, and CDPH communications staff to translate results for healthcare providers and community members

Major Project Impact:

The Fellow's major project will provide valuable information about the causes of cancer mortality inequities in Chicagoans, which collectively added just over 1 year to Chicago's 10-year racial life expectancy gap in 2019-2020. Treatment is known to contribute to these disparities, which are reduced or absent in equal-access health systems. Results will directly inform our outreach to healthcare providers intended to improve their communication with patients. Lessons learned from this project will inform future efforts to use EHR data for chronic disease surveillance and strategy development.

Additional Project #1 Title: Novel public data sources for community health practice

Project #1 Type: Surveillance Activity

Project #1 Description:

CDPH has recently introduced or improved several processes for community members and CBOs to request epidemiology support and public health data, in addition to the Community Health Response Corps described above. The Office of Epidemiology expanded their data request process to include suggestions for improving the Chicago Health Atlas and the Chicago Data Portal and began offering Epidemiology Office Hours to staff of partner CBOs. Community requests through these initiatives have emphasized needs for data on equitable city services, public accommodations, social determinants of health, and quality of life. Examples include the number and distribution of tobacco retail licenses

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

in the city, types of 311 calls being made and how quickly they are closed in different neighborhoods, locations of farmers markets, how often bystander CPR is attempted across the city, and the distribution of trees and parks. These requests require CDPH to access and analyze data sets that are not traditionally held by public health departments, but which have clear public health significance and offer an opportunity to strengthen relationships with other government entities as well as communities. They also dovetail with an increasing research emphasis on place-based health.

The Fellow will support our anticipating and servicing these needs through the analysis and presentation of data for the Community Health Response Corps and for chronic disease related queries for other initiatives on request. The Fellow will assist Emma Boylan and the current AEF fellow with identifying, accessing, and cleaning new data sources, use the data to conduct GIS analyses and create display maps, and translate their findings into informational materials to be shared with the Community Health Response Corps and community members.

Project #1 Objectives and Expected Deliverables:

Specific deliverables will depend on the nature of the data request but will generally include cleaned datasets not yet available on CDPH public sites or brief reports or visualizations of data suitable for a general audience. The Office of Epidemiology data request process uses a ticketing system where the Fellow can submit data and interpretations that can be used to respond to future requests. For data requests of general public interest, the Fellow may also create a new community health indicator to be hosted on the Chicago Health Atlas. New indicators require reproducible/reusable SAS code and documentation.

Project #1 Impact:

Data requests and other community engagement activities by epidemiologists directly address community health concerns while building trust and rapport. The information gleaned from these interactions is also used internally to set priorities and translate our products for different audiences.

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

The Fellow’s primary day to day role in preparedness and response will involve supporting the Community Health Response Corps. The original design of CDPH’s Response Corps (2020-2022) was for COVID Outreach, and as such, Chronic Disease partners with Syndemic Infectious Disease to launch the revised Community Health Response Corps (2022-2024). Although the role of the Corps has expanded to include community resource navigation, health education, and prevention activities related to chronic diseases, they continue to support preparedness and response efforts as well. Corps members were involved in the response to both COVID-19 and MPV by promoting vaccination, testing, and prevention efforts in high-need areas. Corps members continue to promote and schedule appointments for Protect Chicago at Home, under which any Chicagoan can schedule a free at-home appointment to be vaccinated for COVID-19 and influenza for up to 10 people. The epidemiology team and Fellow play an important role in informing community health workers and program staff in their engagement with residents, and ensuring that informational materials reflect current data. The Fellow will spend about 20% of their time supporting the Corps. We anticipate that about 5-10% of their time over the course of their placement will specifically involve preparedness/response, depending on public health needs.

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

We are committed to a well-rounded experience for the Fellow. While the Office of Chronic Disease does not participate directly in outbreak investigations, we will work with our internal partners in Communicable Disease to identify an appropriate opportunity for the Fellow to assist in a cluster or outbreak investigation when the need arises. The Fellow

ID: 45411606

Chronic Disease - Host Site Description

Chicago Department of Public Health

may participate as an ongoing percentage of their weekly effort or be fully detailed for a limited time depending on the needs of the investigation. The Fellow will also have a guaranteed role in translating any public guidance related to an outbreak for the community health workers in the Corps. We anticipate that this activity will take about 5% of the Fellow's time overall, and up to 100% of their time while they are detailed to assist with an active outbreak investigation.

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

For the most part, the Fellow's role in the COVID-19 response is woven into their planned activities supporting the information needs of the Community Health Response Corps, which continues to promote and facilitate vaccination. The Fellow's contributions to the HCS also relate to our COVID response. From 2020 to 2022, the HCS included multiple questions on the immediate social, economic, and health impacts of the pandemic. A subset of participants were also sent a follow up COVID Social Impact Survey (COVID SIS). A major activity of the HCS steering committee is determining which COVID-related questions to drop, retain, or adapt as we monitor the pandemic's longer term impacts on Chicagoans. Supporting the Corps will take about 20% of the Fellow's time across all support activities.

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

Health equity will be a central motivation for all of the Fellow's work while at CDPH. Anti-racism is a CDPH core value expected to be upheld by all employees, and closing the racial life expectancy gap is the primary commitment of Healthy Chicago 2025, our 5-year community health improvement plan. The Fellow's work supporting the data needs of the Community Health Response Corps promote health equity by delivering reliable health information and resources to vulnerable communities chosen based on scores on the Chicago COVID-19 Community Vulnerability Index, which was derived from the CDC Social Vulnerability Index. The community health workers whose activities the Fellow will support are residents of these high-vulnerability communities who are receiving paid training to advance their careers in public health while serving as trusted voices and resource navigators for their neighbors. The Fellow's additional project will provide another opportunity for them to practice responding directly to health concerns of community members.

The Fellow's interactions with mentors will also emphasize health equity. Emma is a social epidemiologist whose research prior to joining CDPH (including PhD to be completed summer 2023) has focused on the relationship between residential segregation and colorectal cancer disparities affecting Black Chicagoans. Emma is also leading the Office of Epidemiology's analysis to identify the causes of death that contribute most to the city's racial life expectancy gap. Dr. Patel leads our office's activities focused on health equity including health literacy promotion, breast cancer screening, and serving as the PI of the Corps.