

**ID: 74288900**

**Injury - Drug Overdose, Substance Use/Mental Health - Host Site Description**

**Public Health - Seattle & King County**

**Assignment Location:** Seattle, US-WA  
Public Health - Seattle & King County  
Prevention Division

**Primary Mentor:** Julia Hood, MPH, PhD  
Senior Epidemiologist  
Public Health - Seattle & King County

**Secondary Mentor:** Hannah Collins, MPH  
Epidemiologist  
Public Health - Seattle & King County

**Work Environment**

Hybrid

**Assignment Description**

This fellowship will be primarily dedicated to projects centered around overdose surveillance and substance use & mental health. Due to the crosscutting nature of these topic areas, the fellow will be working with programs that span the entire health department, including: the Assessment, Policy Development and Evaluation (APDE) unit, the Violence and Injury Prevention Program, the Medical Examiner's Office, Emergency Medical Services Division (EMS), syringe services program, and public health clinics.

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

The fellow will be provided R, Tableau, and any other software needed to complete assigned analyses and data visualizations. The mentors will arrange access to the following databases and systems: syndromic surveillance data that encompasses all emergency department visits and emergency medical services encounters that occur in King County; medical examiner's data; state vital statistics data; and local small area population estimates for public health assessment. The mentors will train and advise the fellow on how to utilize analytic techniques and navigate the various data sources. The fellow will have access to a multitude of epidemiologists, data scientists, and social research scientists within the health department who may have unique experience and expertise relevant to the fellow's interests and assigned projects.

**Projects**

**Surveillance Activity Title: Spatial Assessment of Fatal and Non-fatal Overdose Occurrence**

*Surveillance Activity Description:*

Characterizing the locations where overdoses occur is a key piece of overdose surveillance epidemiology and helps prioritize locations for prevention and risk reduction. This activity would involve exploring various spatial methods to characterize locations of fatal and non-fatal overdoses including housing service sites, encampments, motels/hotels, transit centers, and more to inform outreach efforts and the prioritization of interventions. This project would include the assessment of where overdoses repeatedly occur, identification of unique overdose clusters, and changes in location patterns over time.

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*Surveillance Activity Objectives:*

Project objectives:

- Identify and describe the frequency that overdoses occur at certain types of locations (e.g. housing service sites, motels/hotels, transit centers, businesses, and more)
- Analyze and visualize changes in where overdoses occur over time
- Improve the methods used to identify locations where overdoses occur by improving address identification and matching, collaborating with partners on address reference tables, and linking to other data sources with location information.
- Communicate and interpret data in collaboration with program partners to inform overdose prevention efforts.

Expected deliverable:

- Data summary and visualization of where overdoses are occurring in King County by location type.
- Automated reporting to share with program partners.
- Reports or other written products to inform partners working on overdose prevention and response.

*Surveillance Activity Impact:*

The output from this activity will be used to inform and prioritize overdose prevention and response outreach activities, such as interventions occurring at housing service sites, trainings provided to the community, and informing other data efforts such as overdose fatality reviews.

**Surveillance System Evaluation Title: Evaluation of Population-Level Estimates of the Treatment Cascade for Opioid Use Disorder**

*Surveillance System Evaluation Description:*

The domestic and global HIV control strategy is grounded in a HIV Care Cascade Framework. CDC and other health agencies recommend a similar framework be applied in the context of the opioid epidemic to promote accountability and inform quality improvement strategies. Using King County (KC) Medicaid claims data, PHSKC generates population-level indicators for an OUD treatment cascade that includes the following components: OUD diagnosis, MOUD initiation, and MOUD retention. Elements of the treatment cascade are presented, in detail, on a Tableau visualization that is updated quarterly (see <https://kingcounty.gov/en/dept/dph/health-safety/safety-injury-prevention/overdose-prevention-response/data-dashboards#toc-Medications-for-opioid-use-disorder> ). The fellow will evaluate this surveillance system according to the CDC surveillance system evaluation criteria: utility, simplicity, flexibility, acceptability, sensitivity, predictive value positive, representativeness, and timeliness.

*Surveillance System Objectives:*

The overall objective of the project is to identify strategies to improve the functionality, efficiency, and utility of PHSKC's surveillance of OUD treatment engagement. The deliverables include a report and CSTE abstract describing the results from the evaluation.

*Surveillance System Impact:*

This project will inform enhancements to PHSKC's approach to monitoring the OUD treatment cascade, which will, in turn, better equip clinicians, researchers, policy-makers, and program managers to make data-informed decisions regarding OUD treatment in King County.

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**Major Project Title: Evaluation of novel service delivery models of providing MOUD to people with a history of unstable housing.**

*Major Project Description:*

The intersection of the overdose and housing crises has prompted unprecedented mortality among our nation's most vulnerable residents - people who experience homelessness (PEH). Multilevel barriers to care often obstruct this population's access to medications for opioid use disorder (MOUD) -- a secondary overdose prevention strategy that halves the risk of overdose and improves other health outcomes. To address barriers often encountered by people with a history of unstable housing, several providers in King County are starting to provide MOUD in non-clinical settings, including outdoor locations and permanent supportive housing sites. The fellow will support the collection and analysis of data to evaluate community-delivered MOUD.

*Major Project Objectives:*

The fellow will support evaluation of community-delivered MOUD care for the entirety of the 2-year fellowship through a range of activities including: primary data collection to assess client preferences for MOUD care models, informatics support for programmatic data collection, monitoring routine programmatic indicators, in-depth assessment of patient outcomes, and dissemination of results. The fellow will work with the primary mentor to pre-specify the aims and deliverables associated with each of these activities.

*Major Project Impact:*

This evaluation will generate real-world evidence for novel strategies to expand MOUD utilization among people with a history of unstable housing. Findings from this evaluation will inform how these innovations can further equity objectives, reduce overdose, and be implemented in real-world settings - critical information for jurisdictions that grapple with the syndemic overdose and housing crises.

**Additional Project #1 Title: Syringe Services Program (SSP) Survey Implementation**

**Project #1 Type: Major Project**

*Project #1 Description:*

In partnership with the University of Washington, PHSKC implements a brief survey of SSP clients every two years that collects information on drug use behaviors, service utilization and preferences, and socio-demographic information. The fellow will (1) help coordinate survey development and implementation, (2) conduct surveys with SSP clients, and (3) analyze and disseminate results.

*Project #1 Objectives and Expected Deliverables:*

The goals of the project are to (1) recruit >350 SSP clients to complete the brief survey and (2) develop a report summarizing survey results.

*Project #1 Impact:*

This project will provide local harm reduction program with information about the evolution of drug use trends and service preferences

**ID: 74288900**

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**Additional Project #2 Title: Assessment of substance use behaviors and related risk and protective factors among young people with a history of drug use**

**Project #2 Type: Major Project**

*Project #2 Description:*

In 2024, PHSKC conducted 630 interviewer-administered surveys and 25 qualitative in-depth interviews with young people (16-35) with a history of opioid or stimulant use. This rich data source includes detailed information about consumption patterns of 12 drug classes, DSM-5 criteria for stimulant and opioid use disorder, overdose, infectious disease, treatment and harm reduction service utilization, housing status, stressful events (e.g. violence, incarceration, economic insecurity, caregiving, grief), chronic health conditions, discrimination, sources of social support, demographics, sexual and reproductive history, educational attainment, employment status, and occupational history.

*Project #2 Objectives and Expected Deliverables:*

In consultation with the primary mentor, the fellow will identify a research question pertaining to one of the domains assessed in the survey, develop and implement a statistical analysis plan, and report findings via a community presentation, conference abstract, and/or peer-reviewed manuscript submission. The expected deliverables are (1) statistical analysis plan, (2) results tables, and (3) PowerPoint slides, conference abstract, and/or manuscript.

*Project #2 Impact:*

This project will amplify the voices of people with lived experience in policy/programmatic discussions regarding overdose prevention and drug user health promotion.

**Additional Project #3 Title: Exploratory analysis of drug use and overdose patterns by occupation and employment status**

**Project #3 Type: Major Project**

*Project #3 Description:*

The extent to which overdose incidence varies by King County residents' occupation and employment status is not well characterized. This project will analyze the survey data described above (in Project #2) and vital records corresponding to overdose deaths to describe how overdose risk factors and overdose fatalities varies by employment status and occupation.

*Project #3 Objectives and Expected Deliverables:*

The project objectives are:

- Identify occupations at higher risk of overdose death
- Describe changes in overdose death rates by occupation and employment status over time
- Characterize differences in drug use patterns by occupation
- Use findings to inform overdose prevention efforts

The expected deliverables include:

- A statistical analysis plan
- Code and result tables based on analyses conducted
- Dissemination products such as PowerPoint slides, a brief summary, and presentations to program and other partners.

*Project #3 Impact:*

This activity will help to further characterize the impact of overdose on certain populations and identify areas for prevention and outreach.

**ID: 74288900**

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**Additional Project #4 Title: Estimate the number of people with opioid use disorder (OUD) in King County.**

**Project #4 Type: Major Project**

*Project #4 Description:*

This project will supplement the surveillance system evaluation (described above). PHSKC's current approach to measuring the OUD treatment cascade is limited to Medicaid beneficiaries with diagnosed OUD. The fellow will review the literature on methods to generate OUD population, adapt existing methods for local data sources and contexts, and generate population estimates that help contextualize the reach of MOUD services.

*Project #4 Objectives and Expected Deliverables:*

The goal of this project is to estimate the preceding bars of the OUD care cascade: (1) number of people with OUD, and (2) number of people with an OUD diagnosis.

*Project #4 Impact:*

This project will help contextualize the reach of MOUD services and inform disparity analyses.

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

The fellow will be deployed on a short-term basis to the PHSKC Emergency Preparedness Unit to assist with a workshop, simulation, training, or other activity. Through this endeavor, the fellow will learn about and gain exposure to the incident command structure and related procedures. This experience will prepare the fellow to work on actual response operations. The fellow's effort on preparedness and response activities is currently envisioned to be time-limited. The fellow and their mentors will discuss any longer-term deployment opportunities that become available during the fellowship, if any.

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

The fellow will be responsible for detecting overdose clusters, reviewing and summarizing possible clusters, and assisting with the response. PHSKC utilizes several different data sources to identify emerging drug threats including community drug checking, notification from community partners and providers, and various spatial assessments. The fellow will be involved in the following activities related to overdose cluster investigations:

- Collaborating with epidemiologists to implement spatial analyses to identify potential clusters (3 hours/month)
- Investigating clusters reported from community partners and providers utilizing Emergency Medical Services data, Medical Examiner's Office data, and Emergency Department visit data. Investigations will help determine if the potential clusters warrant public health action (varies as clusters are reported; ~ 2 hours/month)
- Summarizing and communicating cluster findings to epidemiologists, program managers, and other relevant internal stakeholders (2 hours/month)
- Assisting with response activities, such as coordinating with stakeholders, interviewing key informants, developing and distributing risk communication materials, developing preparedness plans, and organizing after-action activities (time varies as clusters are identified)