

ID: 88044429

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

Colorado Department of Public Health and Environment

Assignment Location: Denver, US-CO
Colorado Department of Public Health and Environment
Prevention Services Division

Primary Mentor: Julia Stullken, MPH
Alcohol Epidemiologist (Statistical Analyst III)
Colorado Department of Public Health and Environment

Secondary Mentor: Kylie Yocum, MPH
Drug Epidemiologist
Colorado Department of Public Health and Environment

Work Environment

Hybrid

Assignment Description

The Fellow's assignment would be in the Epidemiology and Evaluation branch of the Prevention Services Division. The Fellow will have the opportunity to collaborate across divisions within the department because substance use and injury are cross-cutting risk factors for a number of short- and long-term health outcomes for the department.

The Prevention Services Division improves the health and well being of all Coloradans through health promotion, evidence-based public health prevention programs, and assurance of access to health care, especially to address non-communicable diseases and conditions (violence, injury, chronic diseases, oral health, maternal and child health). The Fellow will work closely with staff in the Prevention Services Division (e.g. Opioid Overdose Prevention and Harm Reduction programs, Injury Prevention program, Cancer Program, Prescription Drug Monitoring Program) and have the opportunity to build and develop relationships with other substance use and behavioral health epidemiologists within CDPHE (e.g. injury epidemiologist, BRFSS analysts, Office of Suicide Prevention analyst, cannabis epidemiologists).

The Fellow's day-to-day activities, learning opportunities, and challenging tasks will include the following:

- Critical thinking and planning in weekly meetings with mentors (2-4 hours/week minimum).
- Developing and implementing projects that address all applied epidemiology core competencies as outlined in fellow's action plan.
- Collaborate with staff in the Prevention Services Division, across divisions (e.g. Center for Health and Environmental Data) and across state and local agencies (e.g. Colorado Department of Public Safety, local public health agencies, other external partner groups mentioned previously) on projects.
- Gain proficiency in evidence-based public health, CDPHE's Health Equity Framework, cultural competency, and other applied epidemiology competencies through reading, training, live or archived webinars, seminars at the Colorado School of Public Health, and conferences.
- Participate in state and/or national workgroups (e.g. the Colorado Alcohol Impacts Coalition, the CSTE Alcohol Subcommittee, the CSTE Overdose Subcommittee, State Epidemiological Outcomes Workgroup)
- Participate in Epidemiology and Evaluation monthly branch meetings
- Take a daily 15 minute wellness break (e.g. walk, meditate, bike ride using CDPHE bike library)

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

CDPHE provides a data-rich environment with ample technical assistance in statistics and epidemiologic analyses from the mentors and from the other epidemiologists and statisticians across CDPHE. Many standard public health data sources that include important surveillance information are available to the Fellow. CDPHE collects, manages, or has access to vital records, emergency department visits, hospital discharge data, Behavioral Risk Factor Surveillance System (BRFSS), Healthy Kids Colorado Survey (Colorado's version of the YRBS), Pregnancy Risk Assessment and Monitoring System (PRAMS), Baby&You (a prospective cohort survey of birthing people), Fatality Analysis Reporting System (FARS), the Colorado Violent Death Reporting System (CoVDRS), State Unintentional Drug Overdose Reporting System (SUDORS), and National Syndromic Surveillance Program (NSSP). In addition to the traditional public health surveillance systems, the Fellow will have access to our database of geocoded alcohol license data from the Department of Revenue, used for monitoring alcohol outlet density.

The Fellow will participate in the annual BRFSS and biannual Healthy Kids Colorado Survey planning processes, gaining experience in evaluating the usefulness of questions, finding relevant tested survey questions and writing a proposal (if appropriate) that the members of each survey's surveillance advisory board will use to make decisions about what questions will be added to these very competitive surveys. This fellowship experience will improve the Fellow's competencies in epidemiologic methods, persuasive communication in writing, and data governance. The Fellow will gain an understanding of the strengths and limitations of population surveys.

The Fellow will have access to statistical software (e.g., SAS, R), as well as mapping software (ArcGIS), and interactive data visualization software (Tableau). There are a variety of opportunities for the fellow to collaborate with staff who routinely use these software, either through formal user groups or ad hoc meetings. The fellow will also have access to a variety of technical resources from the Public Health Digital Library.

Projects

Surveillance Activity Title: Assess Concurrent Substance Use Patterns in CO

Surveillance Activity Description:

The fellow will conduct a comprehensive investigation into the methodologies and data sources required for accurately monitoring and reporting the prevalence of concurrent alcohol and drug use across Colorado. A focus of the work will involve establishing a consistent and evidence-based case definition for concurrent substance use. This will require the fellow to synthesize the latest guidance, recommendations, and best practices emerging from leading national organizations, particularly the CSTE (Council of State and Territorial Epidemiologists) Overdose subcommittee. This work addresses a significant gap in current public health surveillance, which often relies on single-substance reporting and consequently may underestimate the true burden and complexity of substance use patterns.

Surveillance Activity Objectives:

- Conduct a literature review and identify a reliable data source (e.g. syndromic surveillance, hospital discharge data, residential treatment facility data, etc).
- Determine a case definition and document methods for identifying concurrent drug and alcohol use.
- Document the strengths, limitations, and considerations to ensure accurate narrative interpretation when applying this case definition.
- Identify audience(s) and tailor dissemination strategy accordingly.
- Summarize surveillance findings in a written report or slide deck.

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Surveillance Activity Impact:

Ultimately, this project will provide partners with a more nuanced understanding of substance use trends in Colorado, highlight potential risk factors or communities needing additional resources, and inform prevention efforts of CDPHE and the partner groups mentioned previously.

Surveillance System Evaluation Title: Evaluate the sustainability of excessive alcohol use surveillance in Colorado

Surveillance System Evaluation Description:

The fellow will conduct a holistic evaluation of alcohol epidemiology surveillance across Colorado. The evaluation will assess the sustainability of continued surveillance for specific data sources, particularly in light of current changes to national surveys and uncertainties regarding dedicated funding for alcohol epidemiology. Some of the areas the fellow will assess include but are not limited to: the timeliness of data from various sources (such as Behavioral Risk Factor Surveillance System, Healthy Kids Colorado Survey, Colorado Hospital Association, Department of Revenue, Department of Transportation, National Survey of Drug Use and Health). The fellow will also evaluate the current format and distribution of responsibility across the alcohol epidemiology surveillance system.

Surveillance System Objectives:

- Identify potential barriers or challenges for surveillance as well as opportunities and strengths of the data sources.
- Assess the sustainability of alcohol surveillance in the context of current events, funding, and other internal and external factors.
- Complete a report outlining the findings of the evaluation, including recommendations for improving the surveillance system.

Surveillance System Impact:

By identifying potential efficiencies and resource gaps, this evaluation will provide a strategic roadmap for optimizing Colorado's alcohol surveillance infrastructure to better support data-driven decision-making.

Major Project Title: Alcohol Attributable Outcomes Dashboard

Major Project Description:

The fellow will conduct a comprehensive analysis of alcohol-attributable outcomes to better quantify the health and social burdens of alcohol consumption within Colorado. The fellow will use established methodologies such as the CDC's Alcohol-Related Disease Impact (ARDI) tool, the CSTE developmental indicator for alcohol-attributable hospitalizations, and the CSTE Injury Surveillance Toolkit to assess various health indicators, including but not limited to chronic conditions, acute injuries, and mortality rates linked to excessive alcohol use and related harms. The culmination of this analysis will be the development of an interactive data dashboard designed to translate complex epidemiological findings into a user-friendly visual format.

Major Project Objectives:

- Meet with subject matter experts as well as potential dashboard users to provide input and guide project development.
- Identify and outline the necessary data sources required for each topic/outcome.
- Obtain data and complete analysis to identify prevalence estimates for the state and each county for the indicators chosen.
- Build and refine dashboard or other similar interactive data sharing tool, including a data dictionary or process manual.

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- After dashboard is complete, the fellow will provide a tutorial for data users and present the findings to one or more potential users (such as the State Epidemiological Outcomes Workgroup or the Colorado Alcohol Impacts Coalition).

Major Project Impact:

This tool will serve as a centralized resource for public health practitioners, decision-makers, and community partners, facilitating real-time monitoring of trends and supporting data-driven decision making and resource allocation for alcohol prevention initiatives.

Additional Project #1 Title: Assess the Impacts of Alcohol Outlet Density on Community Level Factors

Project #1 Type: Major Project

Project #1 Description:

CDPHE maintains a StoryMap of single-year measures of alcohol outlet density in the state. However, no formal analysis has been conducted to compare alcohol outlet density measures with community level impacts. The fellow would conduct an analysis of associations between alcohol outlet density and community level factors, such as drinking patterns, residential density, injuries related to impairment, overdoses/poisonings, etc. The fellow will have the opportunity to collaborate with other analysts in the Prevention Services Division, such as the Injury Epidemiologist and the Built Environment team, as well as analysts at other state agencies, such as Department of Public Safety and Department of Transportation, to incorporate data for the built environment (zoning, pedestrian safety), motor vehicle crashes, DUI arrests, or other chosen indicators. The analysis will quantify the relationship between spatial or per capita alcohol outlet density and the chosen health indicators to more accurately depict how alcohol availability may affect communities.

Project #1 Objectives and Expected Deliverables:

- Meet with the necessary data stewards, subject matter experts, and partners to identify appropriate research questions.
- Design and conduct an analysis to assess associations between alcohol outlet density and community level factors (as determined by the literature review and key informant interviews).
- Create spatial data layers in R or ArcGIS that can be used to make web maps for an existing Alcohol Outlet Density StoryMap or for an alcohol attributable factors dashboard (as described above).

Project #1 Impact:

Results from this project will help add nuance and context to a very complex data story about the availability of alcohol in communities. These results will inform a rapidly evolving policy environment for alcohol availability, as well as practitioners focused on prevention of alcohol-related harms and enforcement of alcohol-related laws.

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

The mentors will ensure that the fellow collaborates with staff from the Office of Emergency Preparedness to prioritize meeting this required competency. There will be opportunities to participate in half-day preparedness and response simulations with local organizations, and self-paced online training modules through the Federal Emergency Management Agency (FEMA). Overall, the fellow's role in these efforts will likely take place over a few hours per month, depending on the fellow's interest and other projects.

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

At the beginning of the fellowship, the fellow will have the opportunity to attend a one-day contact tracing training provided by the Colorado School of Public Health in preparation for an outbreak investigation. The fellow will work with staff in the Communicable Disease branch on an active outbreak investigation, including becoming familiar with the proper documentation required by state and federal agencies. Depending on the fellow's interest, there may also be impromptu opportunities to be part of a response to a cluster investigation of overdoses, heat or cold-related illness, or other non-infectious cluster events.