

ID: 87437371

Infectious Diseases - Host Site Description

Adams County Health Department

Assignment Location: Brighton, US-CO
Adams County Health Department
Communicable Disease Epidemiology

Primary Mentor: Raymond Soto, PhD MSPH
Senior Epidemiologist
Adams County Health Department

Secondary Mentor: Jennifer Chase, MS
Communicable Disease Epidemiology Manager
Adams County Health Department

Work Environment

Hybrid

Assignment Description

The AEF will be seated in the Communicable Disease Epidemiology (CDE) program within the Division of Epidemiology and Data Science at the Adams County Health Department. The AEF will receive training in case and outbreak investigations for the roles of communicable disease epidemiologist I and be incorporated into the daily workflows of the CDE program. The AEF will receive additional training as a Population Health Epidemiologist I with the data science program to support the required projects of the fellowship. The AEF will complete the specific projects included in the application and will lead or support the following activities:

- Individual case investigations of communicable diseases, including enteric, zoonotic, respiratory, and vaccine preventable diseases (551 cases and 305 contacts were investigated by the CDE program in 2025)
- Rabies exposure assessments and investigations of human and domestic pet exposures to wildlife or animals highly suspect of having rabies, including testing of suspect rabid animals, post-exposure prophylaxis recommendations and follow up, and pet quarantines or euthanasia (228 investigations were conducted in 2025)
- Outbreak investigations of reportable conditions, including leading teams of investigators, on-site visits, survey development, data collection and analysis, reporting, and preparing situational updates for leadership (246 suspected and confirmed outbreaks were investigated by the CDE program in 2025)
- Perform data entry, reporting, and investigations in the Colorado Electronic Disease Reporting System (EpiTrax)
- Identify and communicate ways to modify investigations techniques to improve workflow and maximize resources to ensure equity in working with people in Adams County and across jurisdictions
- Work closely with ACHD programs and partners to develop innovations for communicable disease epidemiology, including assisting with prevention and community building events to impact communicable disease transmission
- Be a member of the Public Health Incident Management Team (PHIMT) at ACHD and fulfill the requirements of a member in an ICS structure during PHIMT activation
- Create and present materials for communicable disease education for diverse audiences including internal and external partners
- Serve as the epidemiologist on-call for communicable disease after hours response on a 2-week rotating schedule within the CDE program
- Respond to communicable disease questions from providers, partners, and the public

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

The fellow will be supported by a comprehensive and modern data and analytics infrastructure within the Adams County Health Department's Epidemiology and Data Science Division. The department operates an enterprise Integrated Data System (IDS) designed to govern and connect data across programs, enabling secure, efficient, and scalable epidemiologic analysis.

The IDS is built on a multi-platform environment that includes an internal ArcGIS Enterprise deployment, ArcGIS Online, SQL-based relational databases, Microsoft Power Platform, an FME Server for extract-transform-load (ETL) processes, and a dedicated program web server for data applications and dissemination. Together, these systems support the full lifecycle of public health data, from ingestion and validation to analysis, visualization, and reporting.

The fellow will have access to a range of analytic and productivity tools that leverage this infrastructure, including ArcGIS (Enterprise, Pro, and Online) for spatial analysis and visualization; FME for automated data integration and ETL workflows; SAS for statistical analysis; and Microsoft Office for reporting and communication. Adobe Creative Cloud is available to support high-quality data visualization and communication products. The fellow will also work directly with the department's homegrown, web-based, GIS-enabled communicable disease surveillance system, as well as other internally developed applications that support epidemiologic workflows and decision-making.

These systems provide access to diverse data sources, including communicable disease surveillance data, population health and survey data (e.g., BRFSS, Healthy Kids Colorado Survey), vital records, hospitalization, insurance claims, and environmental/community-level datasets. The fellow will receive direct mentorship and technical support from experienced epidemiology and data science staff, gaining hands-on experience with enterprise data systems, applied epidemiologic analysis, and modern public health surveillance in a local health department setting.

Projects

Surveillance Activity Title: Evaluation of disease reporting at detention facilities

Surveillance Activity Description:

It is exceptionally important that detention centers with medical personnel conduct adequate testing, and report to public health timely and consistently to ensure the health and wellbeing of staff and residents in congregate settings at detention facilities. Reportable conditions, including outbreaks in Colorado, are reported and managed in EpiTrax as events. Local and state public health agencies have editing access to records in their respective counties and can see limited information for event records in other counties; sharing rights can be requested from the county of residence for the event as needed. Sexually transmitted infections (STIs) are not accessible to local health agencies and are maintained by the State. Healthcare providers, including health care staff at detention facilities, have access to report conditions, including STIs, through the Reportal to ensure accurate and timely reports to public health. It is unclear what type of testing can be conducted in detention centers on-site and through sending out to commercial laboratories at detention centers in Adams County. Some residents of detention facilities are taken to hospitals and emergency rooms for certain medical conditions and evaluations, which are then also required to be reported by hospitals and labs.

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Surveillance Activity Objectives:

Objectives:

- Assess the timeliness and completeness of disease reporting at detention centers in Adams County
- Work with existing contacts at detention centers in partnership with CDE points of contact to access medical personnel at detention centers to identify type of testing available and performed on-site, specimen collection capabilities, barriers to testing, and thresholds for managing patients at the facility or sending out to local hospitals for medical care
- Evaluate capacity for testing and reporting at detention facilities and opportunities for local public health to support enhanced testing and reporting
- Work with CDE and detention facility contacts to identify reasonable improvements for testing and reporting by detention facilities

Deliverables

- Present findings to ACHD CDE and points of contact at detention facilities
- Write a report on findings and recommendations for improving disease reporting
- Implement improvements for disease identification and reporting by working with CDE and detention facility contacts
- Create a written plan for continued assessment and monitoring of disease reporting at detention facilities by detention centers and public health agencies

Surveillance Activity Impact:

The identification and reporting of illness in congregate detention settings allows public health and detention centers to assure proper management of conditions to prevent further spread of illness. Additionally, outbreak identification can be improved by understanding testing protocols and monitoring surveillance data, ultimately leading to improved health outcomes for residents and staff at detention center facilities.

Surveillance System Evaluation Title: Evaluation of the Adams County Communicable Disease internal surveillance system and development of community facing data sharing tools

Surveillance System Evaluation Description:

In collaboration with the Data Science (DS) program at Adams County Health Department, the Communicable Disease Epidemiology (CDE) program has developed an internal surveillance system (SAV) for reports of communicable disease in Adams County. The SAV contains both historical and real time data from multiple sources compiling all information for communicable diseases reported in and investigated by the CDE program since 2014. The SAV is an ArcGIS based system which provides in depth geospatial information not readily available in other surveillance systems.

The purpose of the SAV is to assist the CDE program in the early identification of outbreaks of communicable disease and the long term trends of reportable conditions in Adams County. The SAV is a fully functioning surveillance system but the use of the information available in the SAV has not been assessed for detection of acute, recurrent, or chronic patterns of disease in Adams County. Additionally, the SAV could be used to update or improve current workflows for the CDE program to enhance disease response. The SAV is currently only for internal use by the CDE program, however, a public facing resource based on the data within the SAV would provide residents and visitors to Adams County with current information on communicable diseases to guide their health decisions and communicate public health messaging.

This evaluation will provide the fellow with the opportunity to assess a novel surveillance system and develop skills in the ArcGIS and ESRI suite of software. The AEF will have the opportunity to work closely with both CDE and DS staff to develop data management skills with subject matter expertise in communicable disease surveillance and produce public facing content in plain language.

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Surveillance System Objectives:

Objectives

- To evaluate the SAV for identification of acute outbreaks and long-term communicable disease trends
- Identify opportunities for improved workflows in communicable disease investigations using the capabilities of the SAV
- Collaborate with DS and CDE staff to publish community facing communicable disease data in plain language for residents

Deliverables

- A report on the identified workflows that could be improved for disease investigation to the CDE program
- A public facing website (ex. ArcGIS dashboard) utilizing communicable disease data from the SAV

Surveillance System Impact:

Identifying opportunities for improved workflows and identification of outbreaks will increase the timeliness of response to communicable diseases by the CDE program. The development of a public facing product on communicable disease will assist in the communication of communicable disease issues important to the health of Adams County residents.

Major Project Title: Assessing the Cost and Burden of Disease Using Colorado’s All-Payer Claims Database

Major Project Description:

Adams County Health Department (ACHD) will leverage Colorado’s All-Payer Claims Database (APCD) to support a project focused on understanding the cost, utilization, and system-level burden of communicable diseases, chronic conditions, and/or behavioral health conditions among county residents. The APCD includes comprehensive medical, dental, and pharmacy claims across public and private payers, offering a unique opportunity to examine real-world healthcare utilization and costs at a population level.

The fellow will work with ACHD staff to explore how claims data can be used to inform public health decision-making, including understanding the economic burden of disease, patterns of access to care, and potential gaps in services. The project will be designed to remain flexible, allowing the fellow to tailor analyses to their interests and to priority areas identified by ACHD program staff.

This project also provides an opportunity for the fellow to engage in applied data governance and ethics, including contributing to standards for ethical and appropriate use of administrative health data in a local public health setting

Major Project Objectives:

Objectives

- Become familiar with the structure, strengths, and limitations of the Colorado APCD
- Explore APCD data to identify information relevant to communicable disease, chronic disease, or behavioral health topics of interest
- Collaborate with ACHD staff to develop a research or evaluation question aligned with county priorities
- Develop an analytic plan to assess healthcare utilization, costs, or patterns of care using claims data
- Apply ethical data use principles and contribute to the development or refinement of data governance standards at ACHD
- Conduct analyses and provide regular updates to ACHD staff and stakeholders

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Project deliverables will emphasize both analytic rigor and effective communication, ensuring that findings can be readily used by public health practitioners and leadership to inform planning and action.

- A written report summarizing findings and implications for public health practice
- Presentation of results to ACHD program staff and leadership
- Optional abstract submission and/or conference presentation, depending on project scope and timing

Major Project Impact:

This project will strengthen Adams County's ability to use administrative health data to inform public health decision-making. By applying the Colorado All-Payer Claims Database (APCD) to assess the cost, utilization, and system-level burden of disease, the project will provide actionable insight into how residents interact with the healthcare system and where gaps or inefficiencies may exist.

The findings will support more informed planning and prioritization for communicable disease, chronic disease, and behavioral health programs by grounding decisions in real-world utilization and cost data. Over time, this work can help improve alignment between public health strategies and healthcare delivery, supporting more efficient use of resources and more targeted interventions.

In addition to analytic outputs, the project will build internal capacity at Adams County Health Department by developing practical approaches to ethical data use, claims-based analysis, and cross-program application of APCD data. These skills and frameworks will have lasting value beyond the fellowship, enabling the department to continue using claims data to support equitable, data-driven public health action.

Additional Project #1 Title: Building partnerships and collaborations with critical public health partners

Project #1 Type: Other

Project #1 Description:

The AEF will assist the CDE team in enhancing and growing partnerships and collaborations with hospitals and nursing homes, by seeking to understand how these teams operate and identifying shared priorities and activities. The AEF will support CDE outreach and activities with Infection Preventionists and have the opportunity to lead outreach to these partners, provide education and presentations on public health activities, and solicit opportunities to work with infection prevention teams. The AEF will provide recommendations for partnerships and support development of these activities with CDE.

Project #1 Objectives and Expected Deliverables:

Objectives

- Assist CDE to build and enhance relationships with hospitals and nursing homes in Adams County
- Learn how hospitals and nursing homes work together to improve public health outcomes
- Understand the importance of public health partnerships with local health care systems
- To build skills to develop and enhance public health partnerships
- To provide education to epidemiology peers on public health priorities and processes

Deliverables

- Presentation on a topic of shared interest with CDE and community Infection Preventionists
- Contribution to an engagement plan for CDE and Infection Preventionists
- Utilize and report in partnership tracking tool, currently under development

Project #1 Impact:

Building and growing partnerships is an essential component of successful public health programming. This activity can strengthen and raise awareness of ACHD, CDE, and public health partnership opportunities. Strong relationships with

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essential partners like hospitals and nursing homes are critical to ensuring the health and safety of patients and residents.

The identification of shared priorities between agencies and educational presentations will provide further opportunity for ACHD to work effectively with infection preventionists and healthcare partners.

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

A fellow would participate in the Public Health Incident Management Team (PHIMT), ACHD’s agency-wide, interdisciplinary emergency response team. PHIMT operates under the Incident Command System to exercise and respond to public health emergencies. PHIMT has been activated since 2023 for such incidents as the Denver Migrant Sheltering, Measles Case and Contact Tracing, and exercises focused on points of dispensing (POD). A full-scale POD exercise is planned for Fall 2026. PHIMT liaises with other public health agencies, hospitals, law enforcement, medical providers, and supportive service agencies to coordinate incident response. The fellow would serve as an integral part of the PHIMT in Operations and/or Planning, utilizing their epidemiologic and other strengths to support ACHD and Adams County. All staff are required to take ICS 100 and 700, and PHIMT members are encouraged to take 200, 800, 300 and 400. Depending on the interest of the fellow, and the demands of emergency response, participation could be 5-25% of their time. Other preparedness and response efforts outside of PHIMT and specific to CDE would include planning and responding to emerging infections, and re-emerging infections such as measles.

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

As an integrated team member of the communicable disease epidemiology (CDE) program, the AEF will have ample opportunity to gain experience in outbreak investigations. The fellow should expect to spend approximately 20% of their time during their assignment to this task. After receiving training on outbreak investigation with the CDE program, the AEF will be expected to support CDE team members during outbreak investigations and eventually lead outbreak investigations with support from the CDE team members. The fellow will have the opportunity to work on expected outbreaks in the community including seasonal reports of enteric and respiratory illness using standardized outbreak response tools and on novel or unusual outbreaks of any type of communicable disease reported during their assignment. In 2025, ACHD investigated 246 suspected and confirmed outbreaks, compared to the annual average of 194 outbreaks (2023-2024).