Epidemiology and Data Science Division

Population Health Epidemiology & Data

Program Overview
Adams County Health Department Divisions:

- Executive and Operations
- Environmental Health
- Health Equity and Strategic Initiatives
- Nutrition & Family Health
- Public Health Nursing
- Epidemiology and Data Science

Epidemiology and Data Science (EDS) Division:

- Communicable Disease Epidemiology
- Population Health Epidemiology/Data
- Emergency Preparedness & Response
Provides medical consultation, technical support, and guidance to the team

Physician
Dr Bernadette Albanese

CDE Manager
Jen Chase

Epidemiology and Data Science Division Director
Adam Anderson

EPR Supervisor
Lisa Oliveto

Executive Director
Kelly Weidenbach

Health Data and GIS Manager
Gabriela Reyes

Adv EPR Planner | Raven Taylor

EPR Planner | Jenifer Zawadowski

EPR Admin Support | Vacant

COVID-19 Team

CDE Lead | Ray Soto
CDE | Drew Dycus
CDE | Laura Ruiz
CDE | Alicia Zelaya

Pop Health Epi | Robyn Harte
Pop Health Epi | Julia Brennan
Practicum | Emily Auer
ELC 2.1 Pop Health Epi | TBD
ELC 2.1 Data Viz | TBD

TBD
Mission and Vision Statement:

Epidemiology and Data Science Division

Epidemiology and Data Science Vision Statement:
The Epidemiology and Data Science Division at ACHD strives to eliminate disease and health disparities in Adams County through **Innovation, Collaboration, Inclusion**

The team will work toward this vision by working through the following goals:

- Build internal communicable disease surveillance system
- Improve community involvement
- Improve communication of data to a variety of audiences
- Reduce health disparities
- Integrated data systems across programs
- Become a nationally known leader in our programmatic work
Services Provided

Population Health
Epidemiology & Data Program

- Provide data and analytics to all Adams County Health Department programs and partners
  - Analysis/Statistics
    - Health Data (Vital Records, Surveillance systems, hospitalization, disease reporting...)
    - Demographic (Census and ACS...)
    - Environmental (Oil & Gas, water wells, climate data, parcel/zoning...)
    - Septic records/permits
    - Facility Inspection (restaurants, pools, childcare...)
    - Community Data (liquor, tobacco, mj, firearm licensing, crime data...)
  - Data Collection Tools
    - Survey123
    - Smartsheet
  - Data Visualizations
  - GIS Mapping
  - Web-based Mapping and Visualizations
- Support Program Evaluation
- Support Community Health Assessment
Services Provided

Population Health Epidemiology & Data Program

- **IT Related Tasks**
  - **Administration of**
    - ArcGIS Server (4 Named users)
    - ArcGIS Online (21 named users)
    - Tableau Server (15 named users)
    - Tableau Public
    - FME Server (ETL and Data Automation) (5 named users)
    - Databases (MySQL, geodatabases..)
  - **Software**
    - ArcGIS
    - SAS/R
    - Tableau
    - FME
    - Smartsheet
    - Monday.com
    - Vizio
    - Adobe Creative Cloud
Goals

Population Health
Epidemiology & Data
Program

- Identify areas where we are seeing health outcomes or behaviors that we need to address
- Describe characteristics of the communities experiencing those outcomes or behaviors
  - Majority of health outcomes and behaviors are driven by characteristics within the community
    - Neighborhood & Built Environment
    - Economic Security
    - Social Inclusion
    - Healthcare Access
    - Food Access
    - Climate
    - Education
  
  - Understanding these characteristics is essential to address the needs of Adams County residents
Timeline:

- Provide data to internal staff and external partners, public, etc.
- Data governance model
- Data infrastructure
- Open data portal
- CDE Surveillance system

2026
- Integrated data model
- Self-service data portals (internal, external)

2027
Data Governance Framework:

- Data Origination
- Adams County Data Infrastructure
- Data Management/Analytics
- Data Engagement
Integrated Data Model:

- **Environmental Health**
  - Septic
  - Vector
  - Spills
  - Inspections
  - Air

- **Health Department**
  - Division/program metrics
  - Dept. goals
  - Strategic plans

- **Communicable Disease**
  - Reportable Diseases
  - Outbreaks

- **Nursing**
  - EHR

- **Population Health Epi/Data**
  - Demographics
  - Vital Records
  - Health Records
  - Survey data
  - Community data
  - Climate
  - Data tools

- **Health Promotion**
  - Program data
  - Focus groups
  - Community Health Assessment
  - Surveys

- **Emergency Preparedness**
  - Partners and Facilities
  - Situational Awareness

- **Integrated Data Systems**
  - Program and Division data can be used to inform work across the health department
Data Site

Population Health
Epidemiology & Data Program

Click ‘Health Data’ from the ACHD website
https://adamscountyhealthdepartment.org/
Section 1: Open Data Site

Adams County Health Department

Health Data & GIS Resources
Adams County Health Department

Open Data
Access selected geospatial datasets published by Adams County Health Department below.
*Please note the open data site is still under development

Resources & Boundaries
Demographics
Environment
Health Behaviors
Health Outcomes

Need help?
Please use the data request form link at the top of this page or click here to submit a data request for Adams County Health Department. A member of our team will reach out to you via email or phone within 3 business days. Please allow for 1-2 week turnarounds depending on project scale.
Data Site

Adams County Health Department

Data Site

Data Request

Please submit your data request for Adams County Health Department below. A member of our team will reach out to you via email or phone. Thank you!

Affiliation:

Choose your affiliation:
- I am a member of the public.
- I am a community partner.
- I work for Adams County Health Department.

Contact Information:

First Name *

Last Name *

Email *

Phone Number

Data Request Details:

Title of Request *
## Section 1: Open Data Site

### Resources & Boundaries
- **Resources**
  - Adams County offices/clinics
  - Schools
  - Health Facilities
  - Hospitals
  - Military recruiting centers
- **Boundaries**
  - Colorado/Adams County
  - Municipalities
  - Neighborhoods
  - Zip codes

### Demographics
- **Demographics**
  - ACS 5yr 2021 county level
  - ACS 5yr 2021 census tract level
  - ACS 5yr 2021 neighborhood level
  - Population density census tract level

### Environment
- **Environment**
  - On-site waste water treatment
  - Restaurant/School/Pool inspections
  - Oil & Gas spill locations
  - Environmental Hazards (EPA)

### Health Behaviors
- **Health Behaviors**
  - BRFSS Health Behavior – community level estimates
  - HKCS 2021 data

### Health Outcomes
- **Health Outcomes**
  - BRFSS Health Outcomes – community level estimates
  - HKCS 2021 data
  - Vital Records
  - CHA
  - NVDRS
Section 2: Interactive Maps

Health Data Sites and Maps
The data sites and interactive maps below visualize topic-specific data and resources around important health topics for Adams County.

Interactive Maps

- ACHD Resources & Boundaries
  Updated: January 2023
- Sociodemographics in Adams County
  Updated: February 2023
- Historic Landfills
  Updated: June 2022
- Rabies Positive Animals
  Updated: February 2023
- CDCH Environmental Hazards
  Updated: May 2023
- ACHD On-Site Waste Water Treatment Systems Search
  Updated: Dec 2022
- EPA Environmental Justice Screening
  Updated: June 2023
Interactive Map Example
Interactive Map Example
Section 3: Health Data Sites and Reports

Health Data Sites

- Healthy Aging in Adams County
  Updated: March 2023

- Mental Health in Adams County
  Updated: April 2023

- Substance Use in Adams County
  Updated: April 2023

Health Data Reports

- Adams County Health Factsheet
  Updated: January 2023

- Adams County Community Health Assessment
  Updated: May 2022

- Adams County Municipal Factsheets
  Updated: August 2023
Mental Health in Adams County

Mental Health Promotion Site

Introduction

An Adams County Health Department, mental health and suicide prevention are a priority and we are working to achieve the overarching outcome of a mentally healthy, violence-free community where individuals have a feeling of hope for their future, a sense of purpose and meaning in their lives, and feel they belong in their families, communities, and cultures.

Mental Health Data and Resource Web Maps

Data provides some insights on the health outcomes that need to be addressed to improve mental health and prevent suicide. The web maps below help to identify data and resources surrounding issues involving mental health.

- Poor Mental Health and Depression in Adams County
  Updated: March 2023
- Colorado Mental Health:
  FactMaps
  Updated: March 2023
- Suicide Mortality in Adams County, 2016-2021
  Updated: March 2023
- Substance Use Mortality in Adams County, 2016-2021
  Updated: March 2023

Mental Health & Access to Care in Adams County

As a result of COVID-19, 37% of Adams County residents reported a decline in mental health.
Dashboard Example
Findings of Mass Shootings and Related Firearm Data

United States and Colorado | June 2022

Purpose

Recent mass shootings have again focused attention on the United States as an outlier in gun violence among more developed countries. They have also encouraged discourse on prevention. While we focus on mass shootings in this brief, as German Lopez reminds us in his May 29, 2022 New York Times article, “Most shootings in America never appear in national headlines. The majority of gun deaths in 2021 were suicides. Nearly half were homicides that occurred outside mass shootings; they are more typical acts of violence on streets and in homes (and most involve handguns). Mass shootings were responsible for less than 2 percent of last year’s gun deaths.” Mass shootings are, however, what typically drive public response and dialogue. Despite personal and political beliefs about guns and gun access, most Americans agree that the new common mass murders of school children, grocery shoppers, and everyday workers have crossed a line. They are too much. They are too horrific.

Mass shootings are a specific type of violent crime, often with characteristics different from other violent crimes. In order to better understand mass shootings and the factors related to them, this brief explores available national and state data related to mass shootings. Data in the brief include the type and legal status of guns used in U.S. mass shootings, guns traced and recovered in Colorado crimes, gun sales, offender characteristics and motivation, and firearm policy and regulation.

We hope this brief, which only skims the surface, provides useful information for people interested in learning about mass shootings from a public health perspective, summarizing and synthesizing information that will support continued, thoughtful, and useful discourse and action.

Promote, protect and improve the lifelong health of individuals and communities in Adams, Arapahoe and Douglas Counties through the effective use of data, evidence-based prevention strategies, leadership, advocacy, partnerships, and the promotion of health equity.

Offender Mental Health

Data exist that explore offender mental health. Most offenders experience the desire to commit suicide at some point before or after a mass shooting event. In fact, 69% are considered to have a mental illness, with a quarter of offenders experiencing thought and/or mood disorders. Nearly half of all offenders used or abused substances, with alcohol being the most common substance used or abused.

Figure 9: Percent of Offenders Mental Health prior to event, 1966-2022

- 71% of offenders experienced suicidality
- 52% experienced suicidality prior to the event
- 62% had no prior suicidality, but had an intent to die in the event
- 68% of offenders had a mental illness
- 26% had a thought disorder
- 25% had a mood disorder
- 32% had indication of psychiatric disorder, but no diagnosis
- 19% had other psychiatric disorder
- 42% of offenders used or abused substances
- 26% had a problem with alcohol
- 19% had a problem with other drugs
- 16% had a problem with marijuana

Figure 10: Percent of Offenders most common Mental Health Indicators, 1966-2022

<table>
<thead>
<tr>
<th>Mental Health Indicators</th>
<th>1966-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.82% Thought disorders</td>
<td>21.98%</td>
</tr>
<tr>
<td>21.98% Mood disorders</td>
<td>31.82%</td>
</tr>
<tr>
<td>21.98% Substance use</td>
<td>10.00%</td>
</tr>
<tr>
<td>21.98% Substance use</td>
<td>4.80%</td>
</tr>
<tr>
<td>11.93% Substance use</td>
<td>11.93%</td>
</tr>
<tr>
<td>11.93% Substance use</td>
<td>11.93%</td>
</tr>
<tr>
<td>11.93% Substance use</td>
<td>11.93%</td>
</tr>
</tbody>
</table>
Firearm-Related Cases Filed between 07/01/2022 - 09/30/2022

This map shows the geographic areas with the highest density of Firearm-related cases filed between July 1, 2022 to September 30, 2022. There were 248 Firearm-related cases filed with offense dates ranging from 5/27/2013 to 9/28/2022. Cases filed may have more than one charge associated with the case, but this map only displays deduplicated cases, regardless of the number of charges.

Source: 17th Judicial District Attorney’s Office, 2022
Firearm-Related Cases Filed between 10/01/2022 - 12/31/2022

This map shows the geographic areas with the highest density of Firearm-related cases filed between October 1, 2022 to December 31, 2022. There were 227 Firearm-related cases filed with offense dates ranging from 4/10/2021 to 12/26/2022. Cases filed may have more than one charge associated with the case, but this map only displays deduplicated cases, regardless of the number of charges.

Source: 17th Judicial District Attorney’s Office, 2022
This map shows the geographic areas with the highest density of Firearm-related cases filed between January 1, 2023 to March 31, 2023. There were 280 Firearm-related cases filed with offense dates ranging from 12/20/2020 to 3/28/2023. Cases filed may have more than one charge associated with the case, but this map only displays deduplicated cases, regardless of the number of charges.

Source: 17th Judicial District Attorney’s Office, 2022
COVID19 Case Investigation Main Dashboard
Using ESRI ArcGIS Online

CDE Surveillance System Example
CDE Surveillance System Example

COVID19 Case Importing Process
Using FME Workbench

Overlay cases with city boundaries

Import cases from State reportable disease database
Geocode addresses using each county's geocoding service
De-duplicate against existing records in CARL
Format date fields
Write cases to feature service
CDE Surveillance System Example
The Epidemiology and Data Science Division at ACHD strives to eliminate disease and health disparities in Adams County through **Innovation, Collaboration, Inclusion**
Thank you!

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