Colorado Health Observation Regional Data Service (CHORDS)

Harmonizing Information for a Healthier Colorado

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Denver Public Health

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Culture of Data Conference
Denver, Colorado

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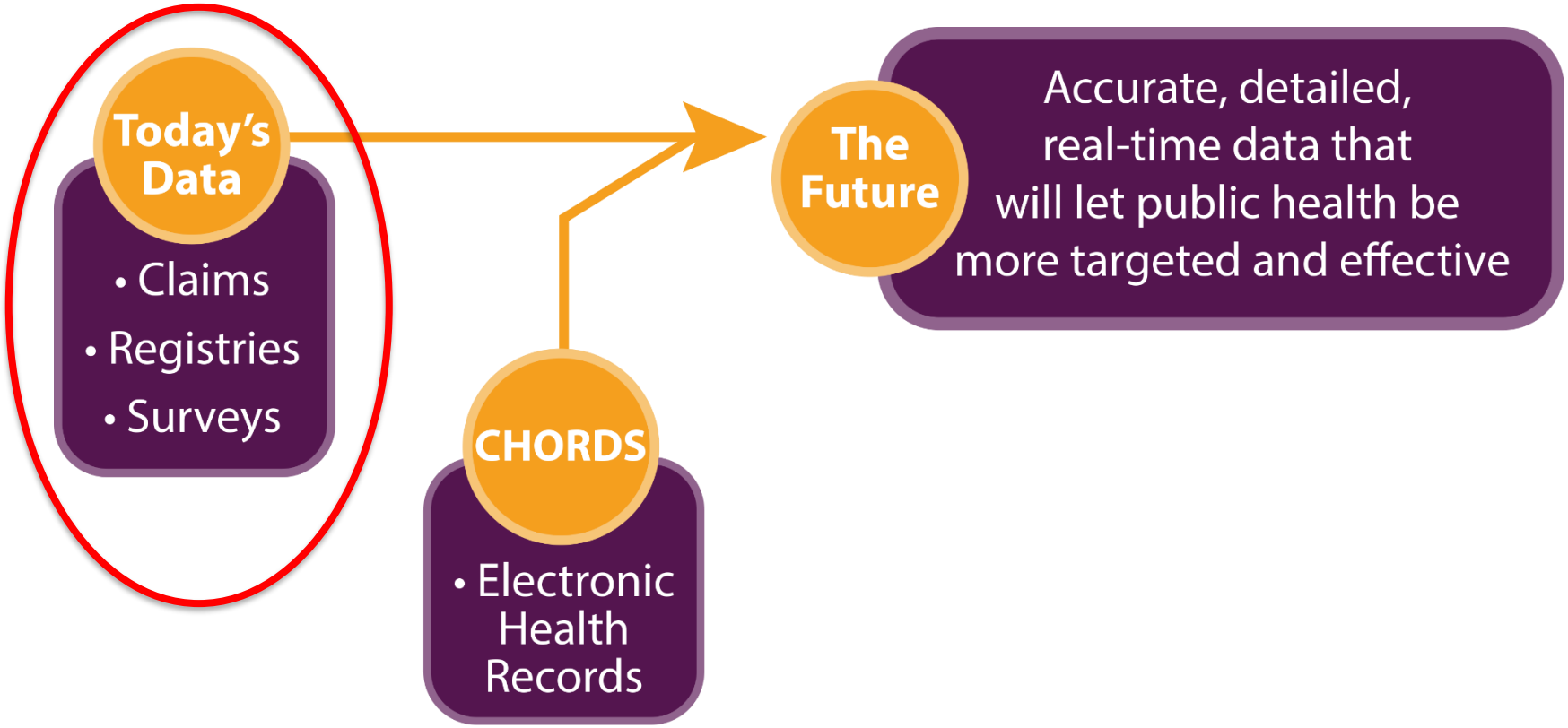
Background | Where We Are Now



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Background | Where We Are Now

- Public health rely on traditional data sources to evaluate programs, target resources and understand disease trends
  - Traditional health surveys
  - Reportable events
    - Vital statistics
    - Disease registries
- Limitations to this data
  - Untimely
  - Sparse clinical information

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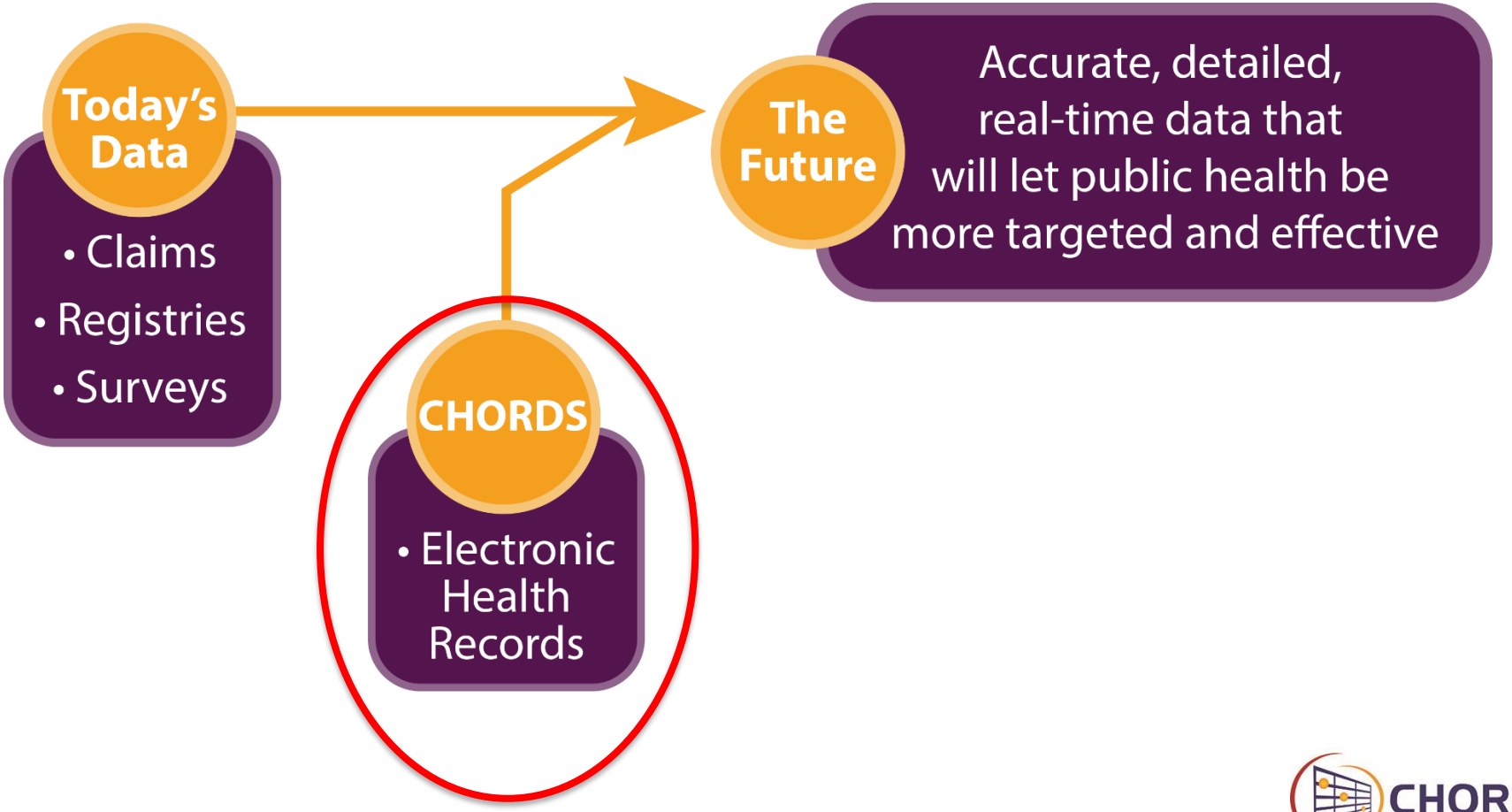
Background | Where We Are Now



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CHORDS | What is it?

- CHORDS is a network conceived in 2011 that uses electronic health records (EHR) data to support public health monitoring and research efforts
  - Initial efforts were focused around tobacco and cardiovascular disease registry development
  - Denver Public Health and Kaiser Permanente Colorado began work on a BMI registry project

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CHORDS | What is it?

- Distributed data network
- Retrieves data from participating healthcare providers' EHRs
- Creates a common information image (Virtual Data Warehouse)
- Allows questions to be asked (PopMedNet)
- Permits population-based monitoring and research
- Measures change in priority health outcomes
- Integrates clinical, demographic, and/or place-based data

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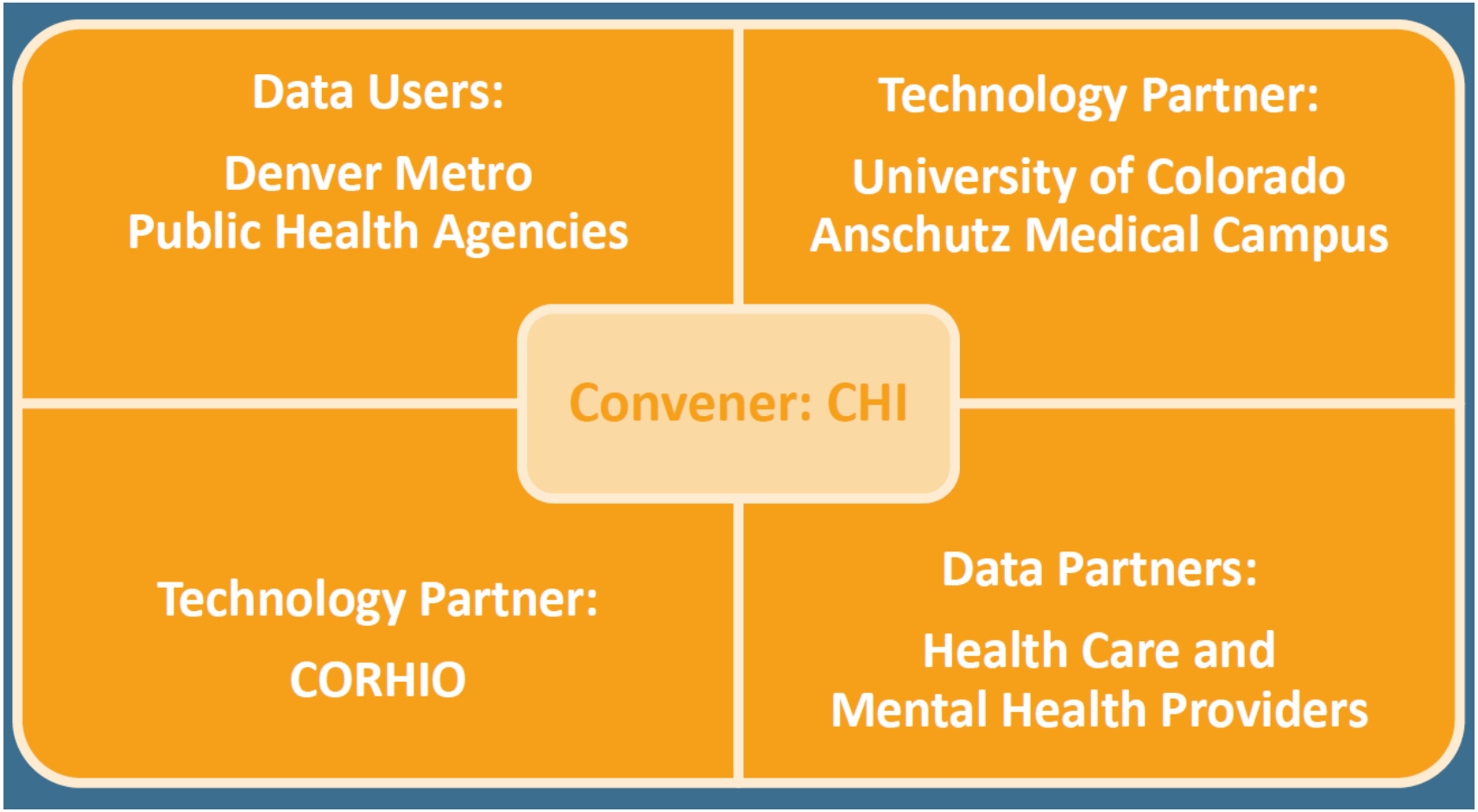
CHORDS | What is it?



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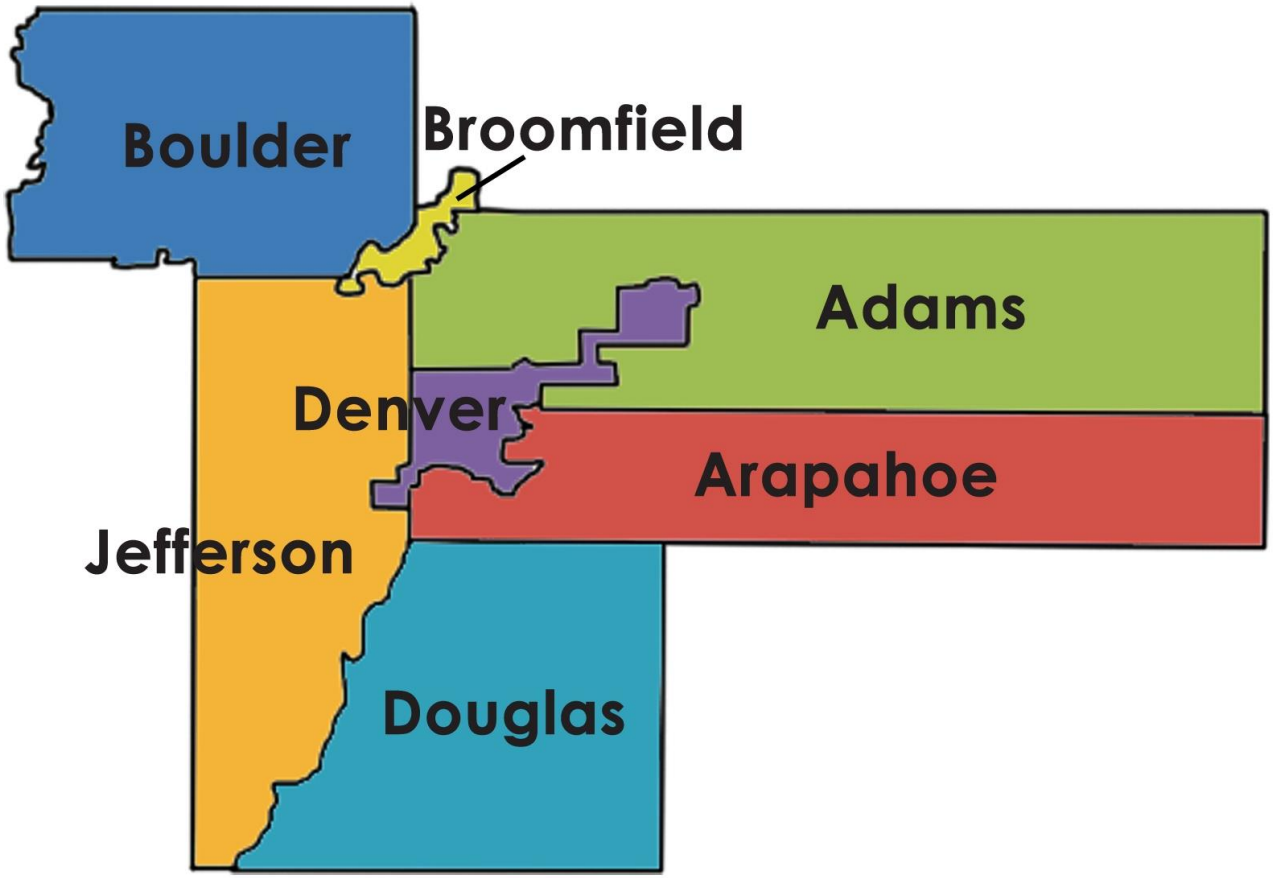
CHORDS | Who are the data users?



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CHORDS | Who are the data partners?

Health Systems

- Children's Hospital Colorado
- Denver Health
- Kaiser Permanente Colorado

Mental Health Centers

- Mental Health Center of Denver

Safety Net Providers

- Clinica Family Health
- Colorado Alliance for Health Equity and Practice
- Colorado Coalition for the Homeless
- High Plains Community Health Center
- Metro Community Providers Network

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CHORDS | What data is available?

- Electronic health record (EHR) data from nine healthcare providers in Metro Denver
  - Demographics: Birth date, gender, race
  - Encounters: Date, encounter type
  - Vital Signs: Height, weight, blood pressure
  - Diagnosis: Diagnosis codes
  - Census Location: Patient's geocoded location
- Each CHORDS data partner retains full control over any protected health information

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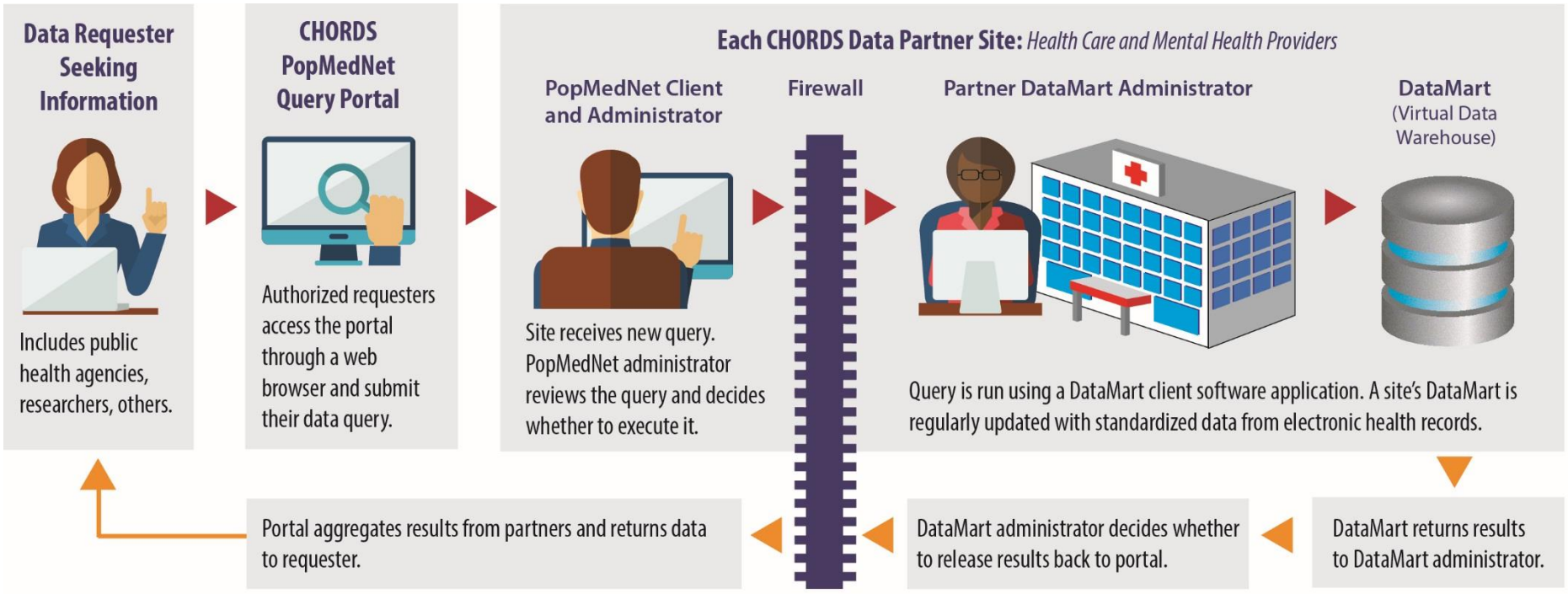
CHORDS | How does it retrieve data?



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CHORDS | What data is received?

- CHORDS provides aggregated data for use by local public health agencies and researchers
  - Demographically
  - Geographically
- Information cannot be traced back to individual patients
  - Mask data elements that are 10 or less

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CHORDS | Current Project Goals

- Set up a regional surveillance governance structure
- Execute data use agreements
  - Five local public health agencies
  - Nine data partners
- Build and implement requests
  - Depression
  - Hypertension
  - Diabetes mellitus
  - Obesity (childhood and adult)

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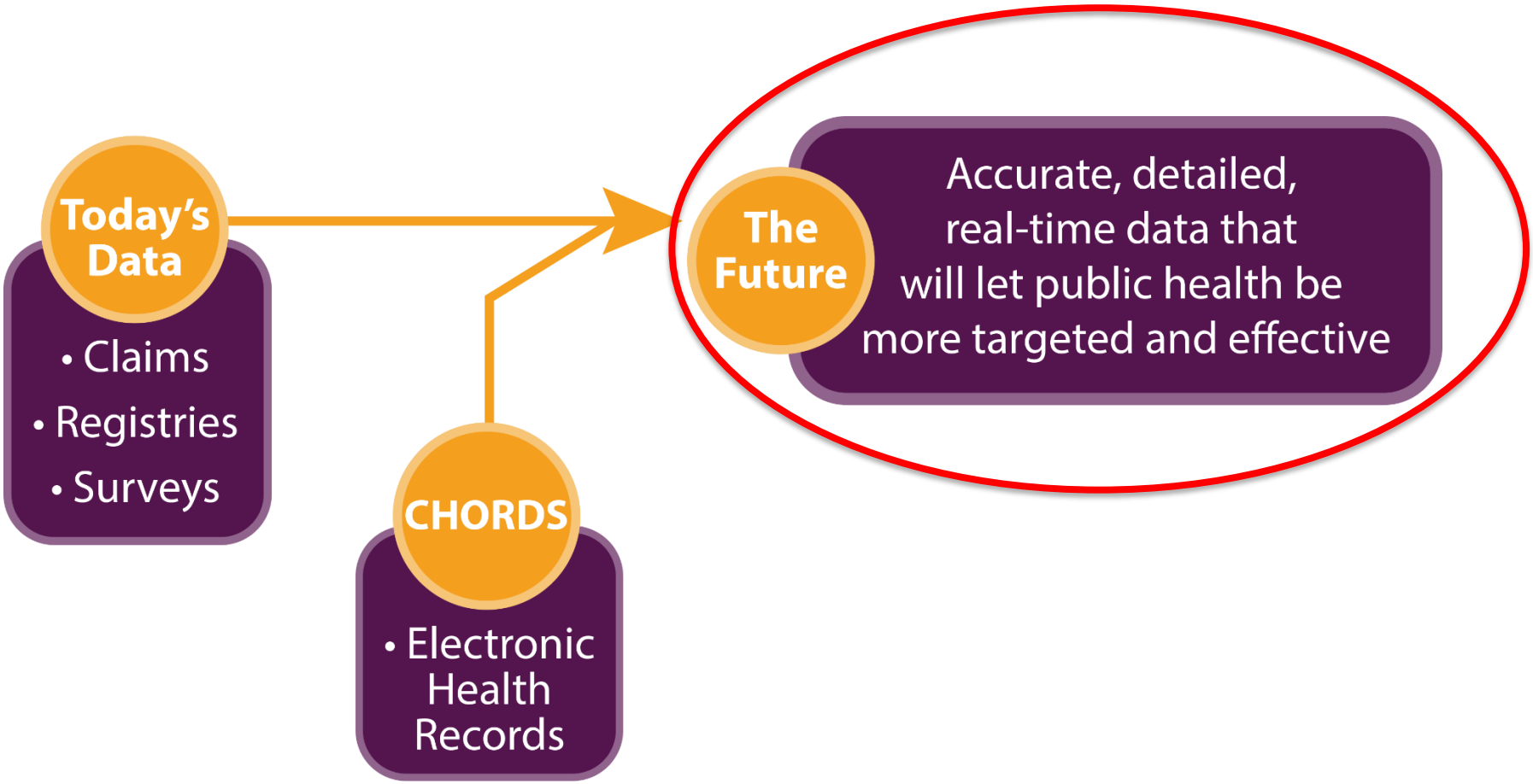
Background | Where We Are Going



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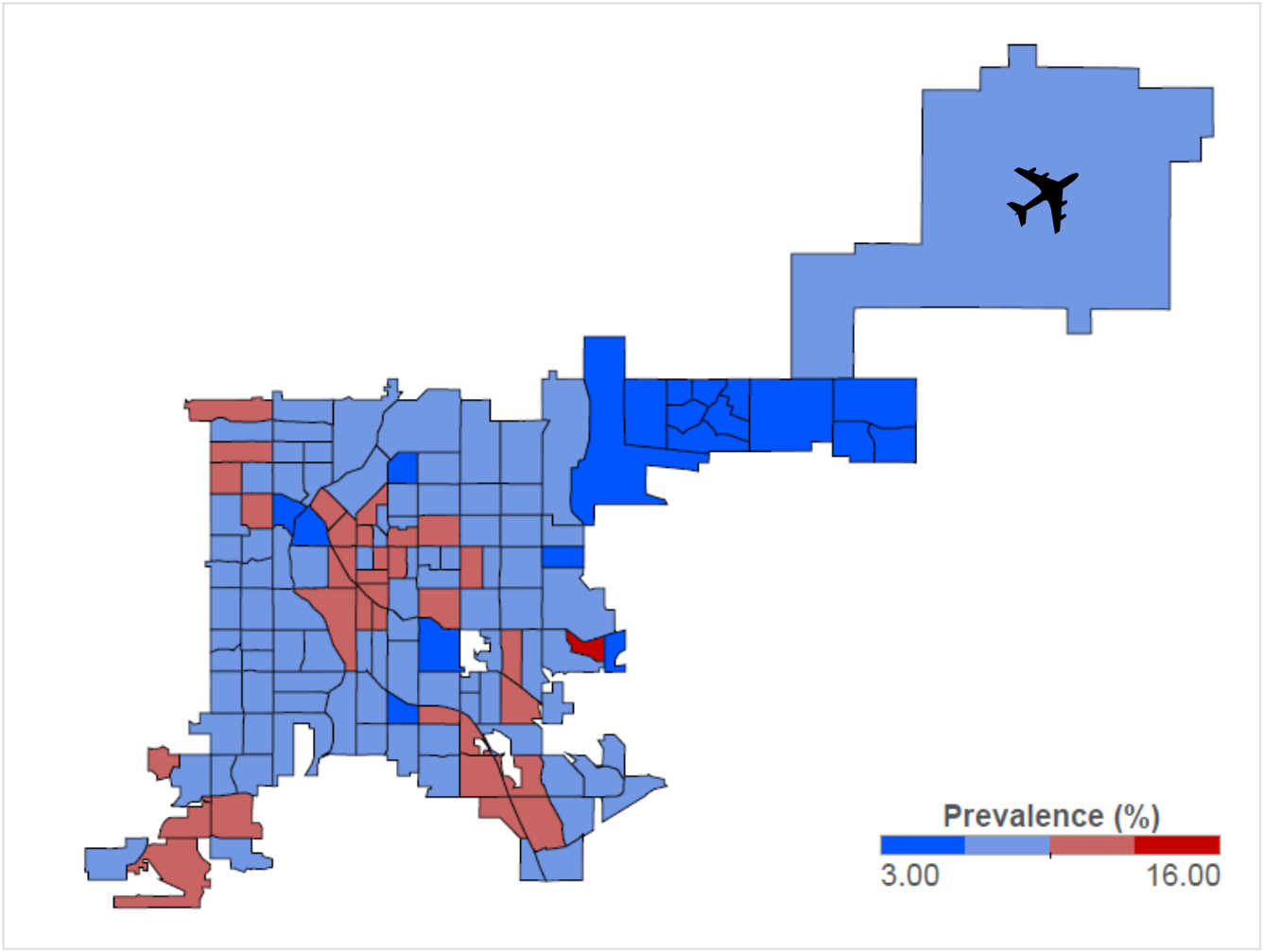
CHORDS | Depression in Denver County

Prevalence of Depression by Census Tract, Denver County, 2015



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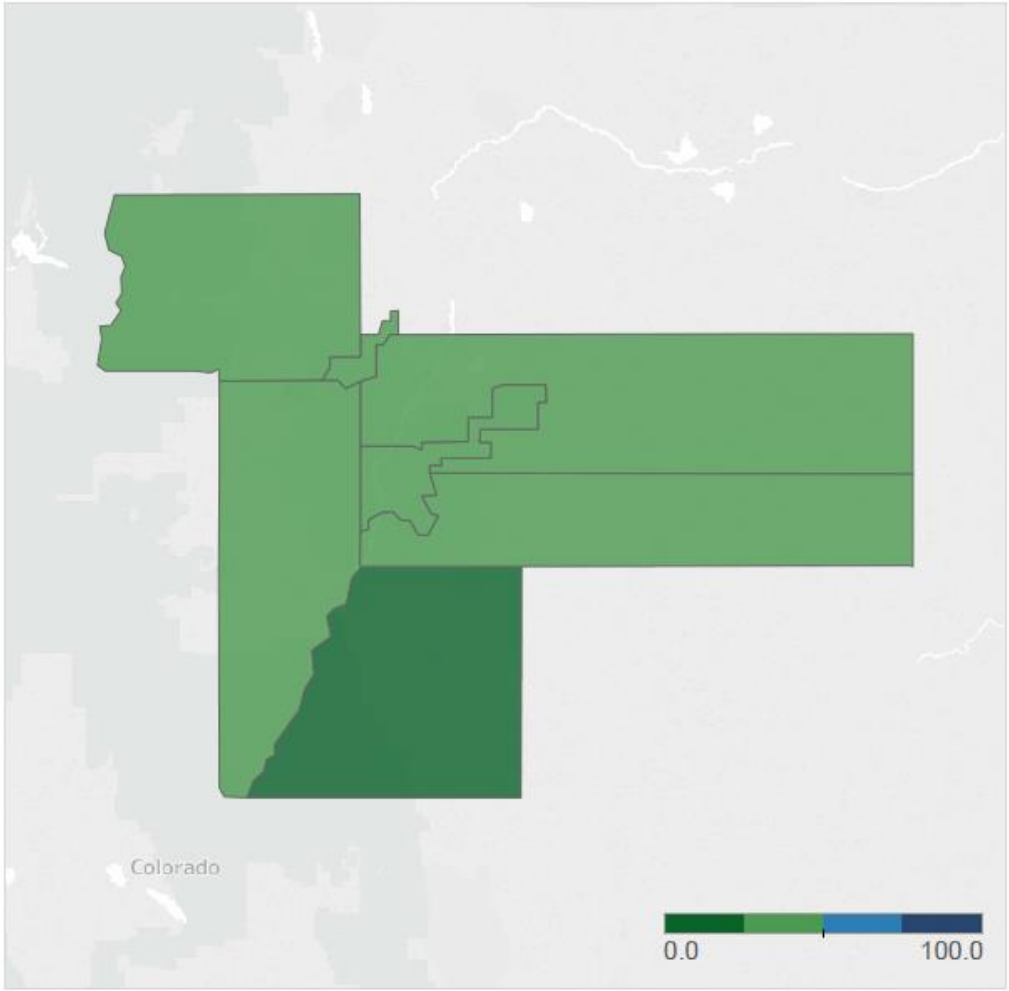
CHORDS | Metro Denver Coverage

Percent of ACS Population Estimate Captured in the CHORDS Population, 2015
(i.e. CHORDS counts/ACS counts)



Category
Total
☐ Show history

Total Percent of ACS Population Estimate Captured in CHORDS

County	
Adams	45.4
Arapahoe	25.6
Boulder	28.8
Broomfield	30.7
Denver	38.2
Douglas	19.1
Jefferson	26.2

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Additional Resources

Denver Public Health
Promotion • Preparedness • Prevention • Protection

Key Issues

Key Issues / Community Health / Colorado Health Observation Regio

Colorado Health Observation Regional Data Service
September 3, 2016

CHORDS

The Colorado Health Observation Regional Data Service (CHORDS) is a seven-county regional
Denver metro area that uses electronic health record data to support public health evaluation an
efforts. It began in 2011. Currently, 11 health care provider organizations contribute data.

CHORDS provides timely, location-based information on population health measures to help ans
highest rate of tobacco use, or of depression? Each health care organization retains full control
back to individual patients.

In 2016, the Colorado Health Foundation awarded a two-year, $1.9 million grant to the Colorado Health Institute (CHI) with the goals of expanding the number of public health agencies using CHORDS from one to six and bringing on additional health care and mental health providers to contribute data. These include local public health agencies representing Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas and Jefferson counties, as well as the University of Colorado Denver Adult and Child Consortium for Outcomes Research and Delivery Science (ACCORDS), Denver Health and CORHIO, Colorado's largest health information exchange network.

CHORDS data contributors are: Children's Hospital Colorado, Clinica Family Health, Clinica Tepeyac, the Colorado Alliance for Health Equity and Practice (CAHEP), Denver Health and Hospital Authority, High Plains Community Health Center, Inner City Health Center, Kaiser Permanente Colorado, Metro Community Providers Network, Salud Family Health Centers and the Stout Street Clinic operated by Colorado Coalition for the Homeless.

How Can I Learn More?

The project is always looking for new partnerships with both data contributors and interested users. If you are interested in participating or would like more information about CHORDS, please contact Sara Schmitt, Director of Community Health Policy at CHI, at 720.382.7081 or schmitts@coloradohealthinstitute.org.

CHORDS

Harmonizing Information for a Healthier Colorado

Information for Data Partners

The Colorado Health Observation Regional Data Service (CHORDS) collects, analyzes and presents data from participating partners' electronic health records (EHRs) to monitor population health, target areas for intervention and conduct research. All data are securely exchanged by removing personally identifiable patient information.

Five metro Denver local public health agencies are working together on this groundbreaking project to use data from 11 health care partners to better address obesity, diabetes, cardiovascular disease and mental health issues at the community level. CHORDS can help answer questions like *Which Aurora neighborhood has the highest rate of depression? Which Denver neighborhood has the highest levels of hypertension and lowest levels of hypertension control?* New community-based and clinic-based interventions, outreach programs and preventive services may be more successful because granular EHR data can identify specific communities or populations, measure factors affecting health and target interventions.

Your participation is the next step in achieving these goals.

How Does CHORDS Work?

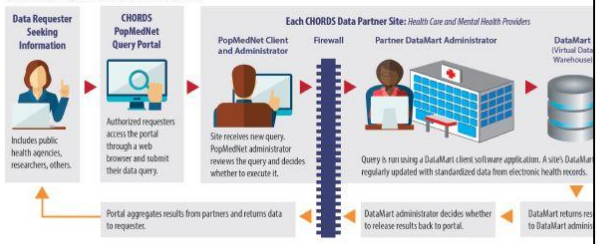
PopMedNet™ powers the data sharing in CHORDS
powered by a secure software application that req
and receives data from partner sites, including fro
mental health partners. Partners organize EHR dat
into a common data model (a "virtual data wareho
or VDW) and establish a connection to the CHORD
network using PopMedNet.

In this distributed network, data partners retain fu
control over their data; decide which data are avai
for querying; which queries are approved and exe
whether results are returned to requestors; and wh
permitted to submit queries. CHORDS adheres to
HIPAA and 42 CFR regulations, and exchanges dat
accordance with established governance policies
procedures.

Why Become a Data Partner?

Electronic health records are a critical source of population health data. Sharing and using these d
will improve our collective understanding of obes
hypertension and other health issues. These data
a more comprehensive picture of health in commu

CHORDS Federated Query Overview



CHORDS

Frequently Asked Questions about Colorado Health Observation Regional Data Service (CHORDS)

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Overview

1. What is CHORDS?

Colorado Health Observation Regional Data Service (CHORDS) is a regional collaborative partnership between Colorado health providers, public health departments, and the University of Colorado Denver to share health data. CHORDS collects, analyzes and presents data from participating partner electronic health records (EHRs) into one registry that can be used to monitor population health and conduct research. All data is securely exchanged by removing personally identifiable information.

CHORDS refers to both the technology platform and a virtual organization of partners. The partners agree to share patient health data which provides insight on local health needs and issues. CHORDS is funded by several federal and state grants/contracts and non-profit foundations.

2. What is the purpose of CHORDS?

CHORDS facilitates access to local health data for communities throughout Colorado to monitor population health trends, study populations or diseases, and evaluate interventions. EHR data provide a level of accuracy, statistical power, and geographic detail unavailable through established health surveys, the traditional local public health information source. New community- and clinic-based interventions, outreach programs, and preventive services, informed by local EHR data, may be more successful because granular data can identify specific communities or populations, measure factors affecting health, and target interventions. EHR data can answer many health questions that surveys or claims data typically cannot (e.g., which neighborhood has the highest level of hypertension and lowest level of hypertension control?).

CHORDS is broadening its scope and reach to provide

CHORDS
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Questions?

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