

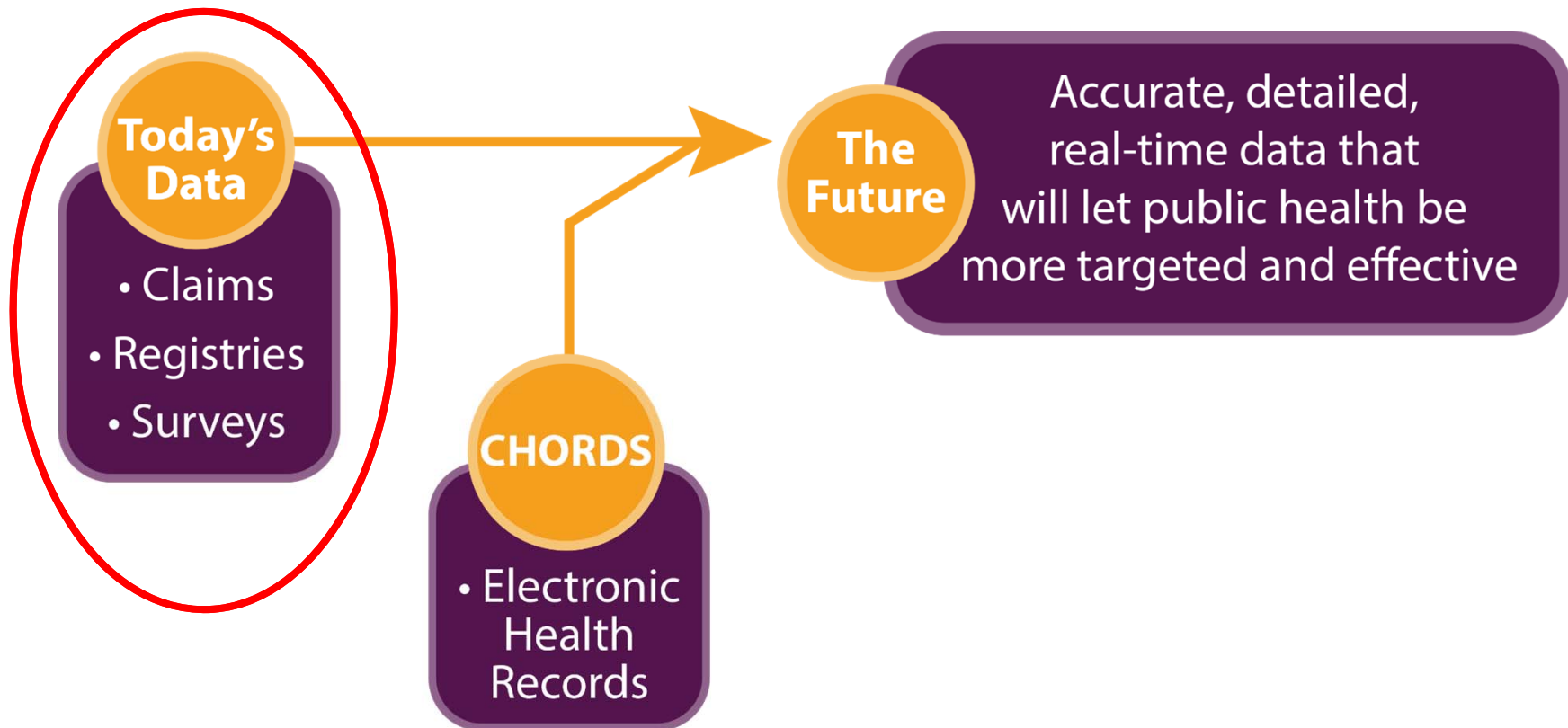
Colorado Health Observation Regional Data Service (CHORDS)

Harmonizing Information for a Healthier Colorado

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Denver Public Health

Friday, June 23, 2017 | 10:00 AM – 10:45 AM
Culture of Data Conference
Denver, Colorado

Background | Where We Are Now

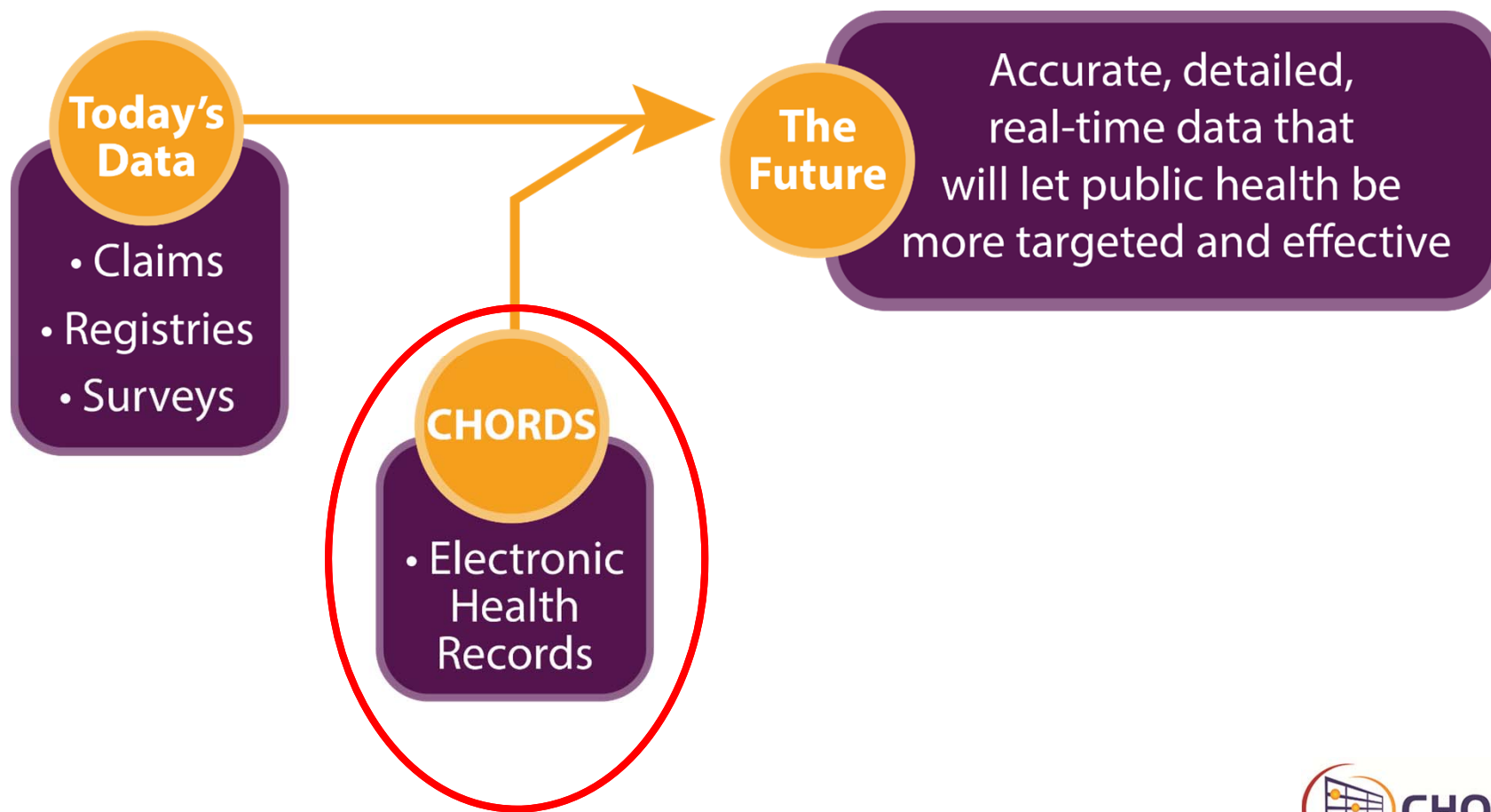


Background | Where We Are Now



- 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

Background | Where We Are Now



CHORDS | What is it?



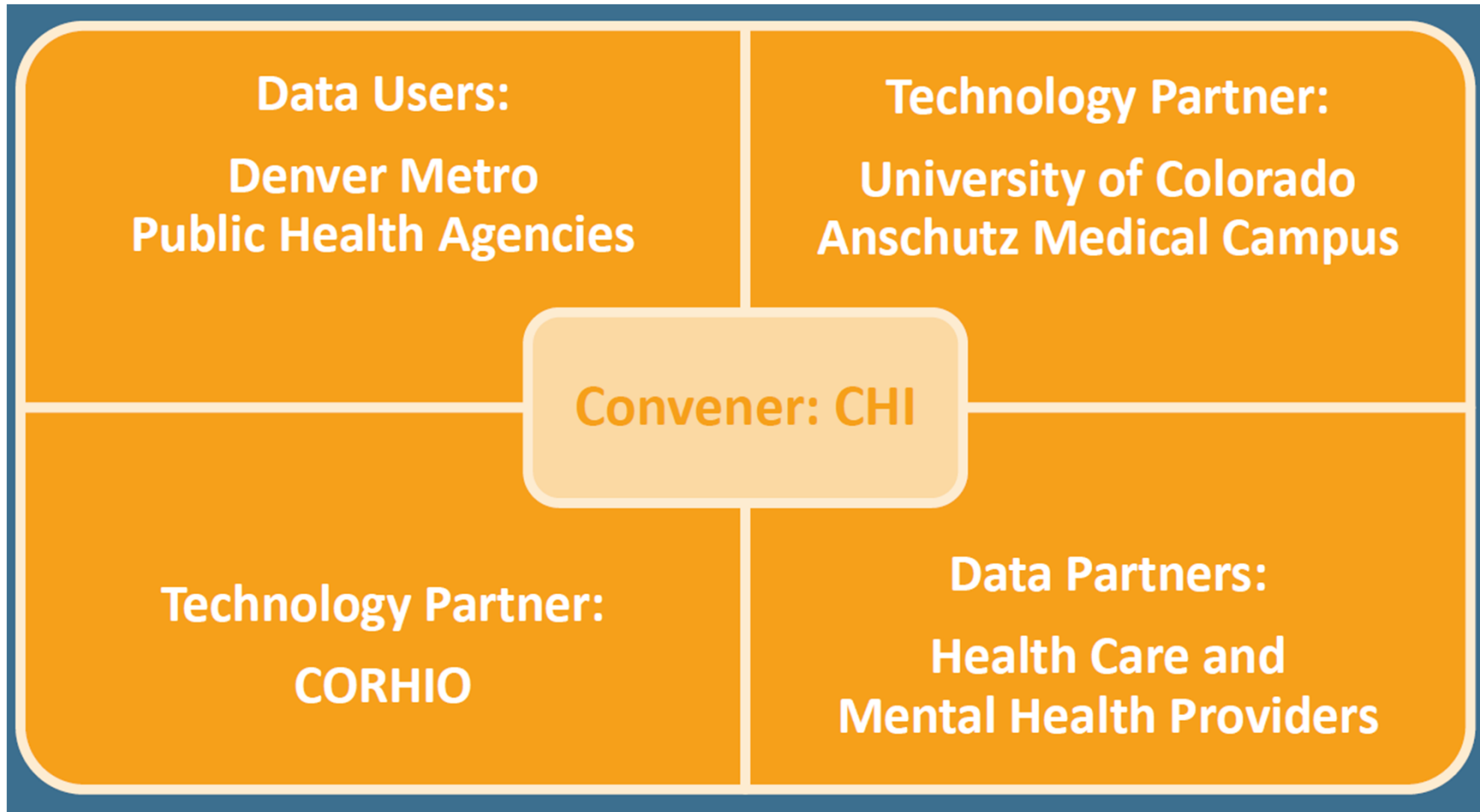
- CHORDS is a network conceived in 2011 that uses electronic health records (EHR) data to support public health monitoring and research efforts
 - Initial efforts were focused around tobacco and cardiovascular disease registry development
 - Denver Public Health and Kaiser Permanente Colorado began work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

CHORDS | What is it?

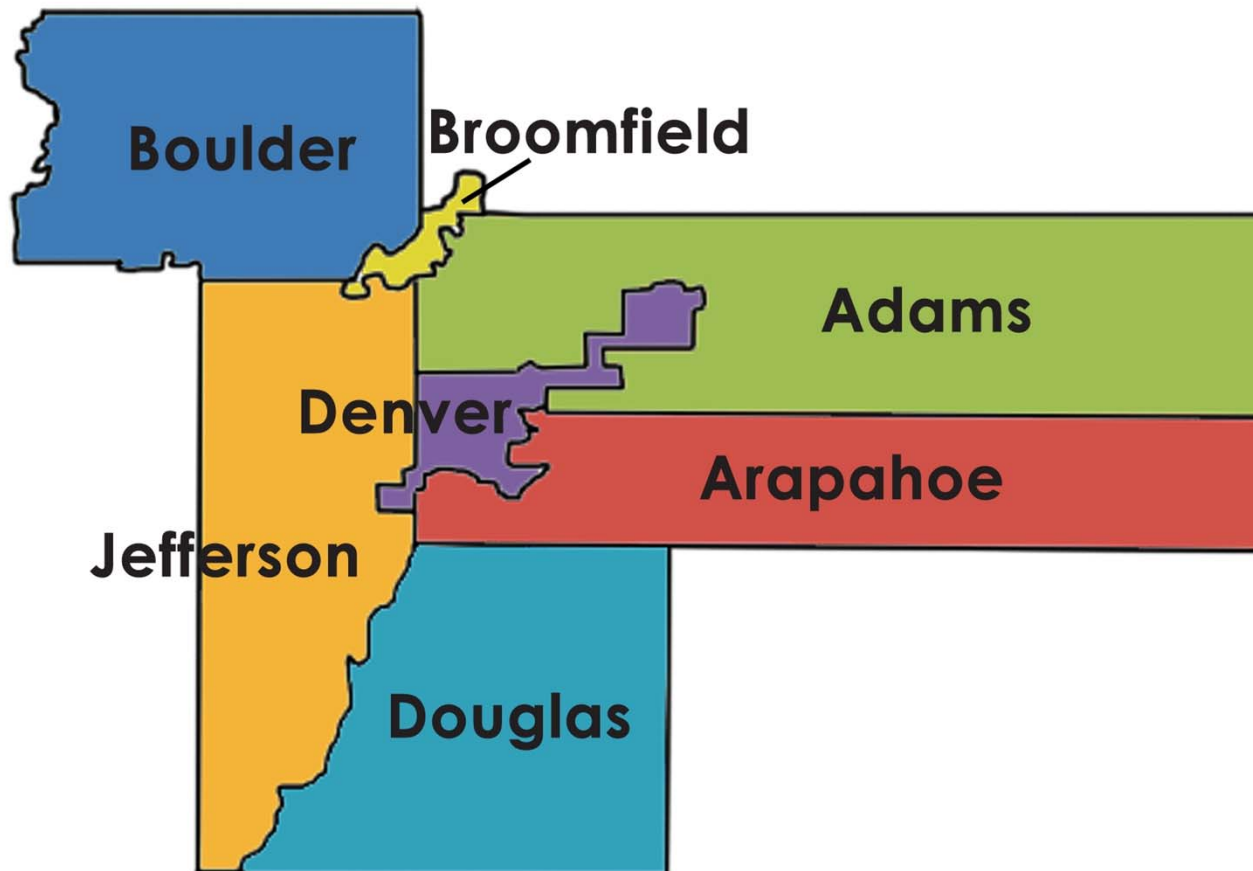


- Distributed data network
- Retrieves data from participating healthcare providers' EHRs
- Creates a common information image (Virtual Data Warehouse)
- Allows questions to be asked (PopMedNet)
- Permits population-based monitoring and research
- Measures change in priority health outcomes
- Integrates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

CHORDS | What is it?



CHORDS | Who are the data users?



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

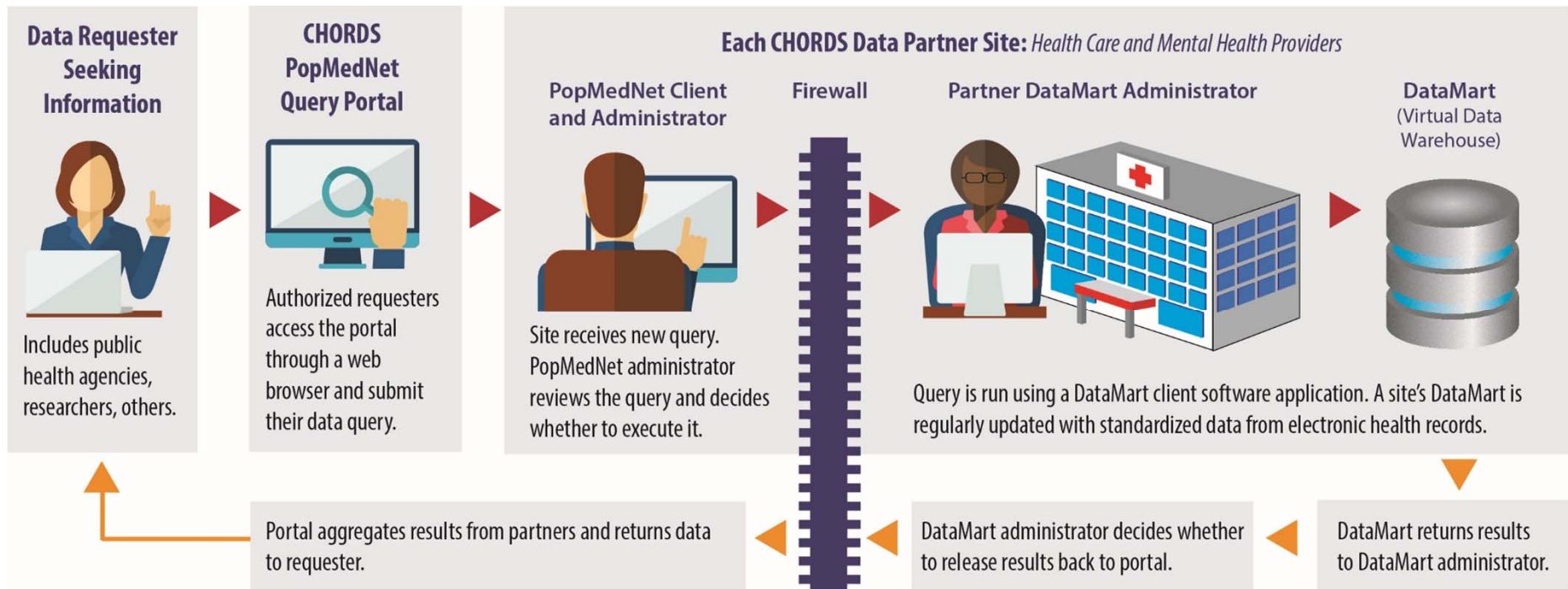
- Clinica Family Health
- Colorado Alliance for Health Equity and Practice
 - Colorado Coalition for the Homeless
 - High Plains Community Health Center
 - Metro Community Providers Network

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

CHORDS | How does it retrieve data?



CHORDS | What data is received?



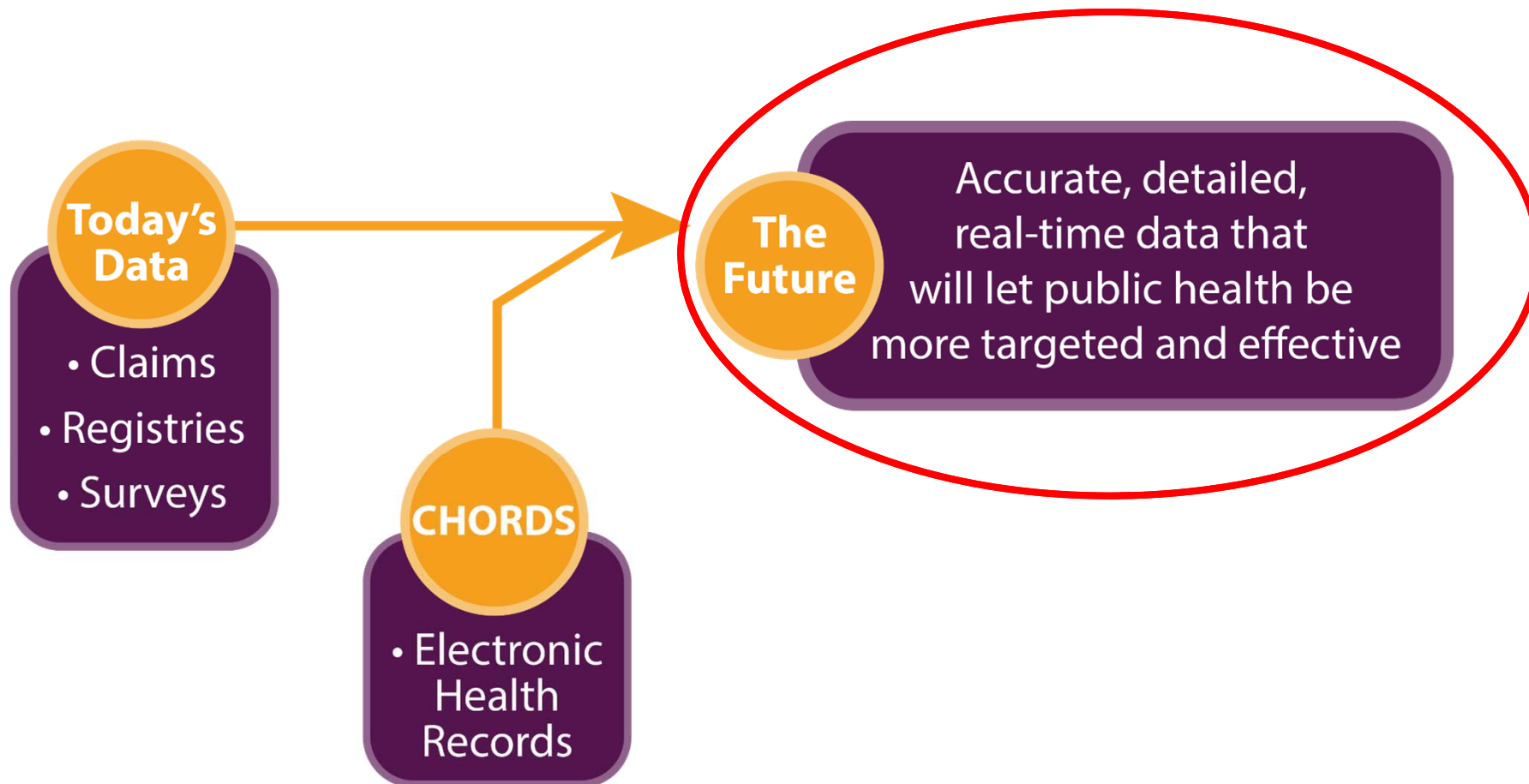
- CHORDS provides aggregated data for use by local public health agencies and researchers
 - Demographically
 - Geographically
- Information cannot be traced back to individual patients
 - Mask data elements that are 10 or less

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)

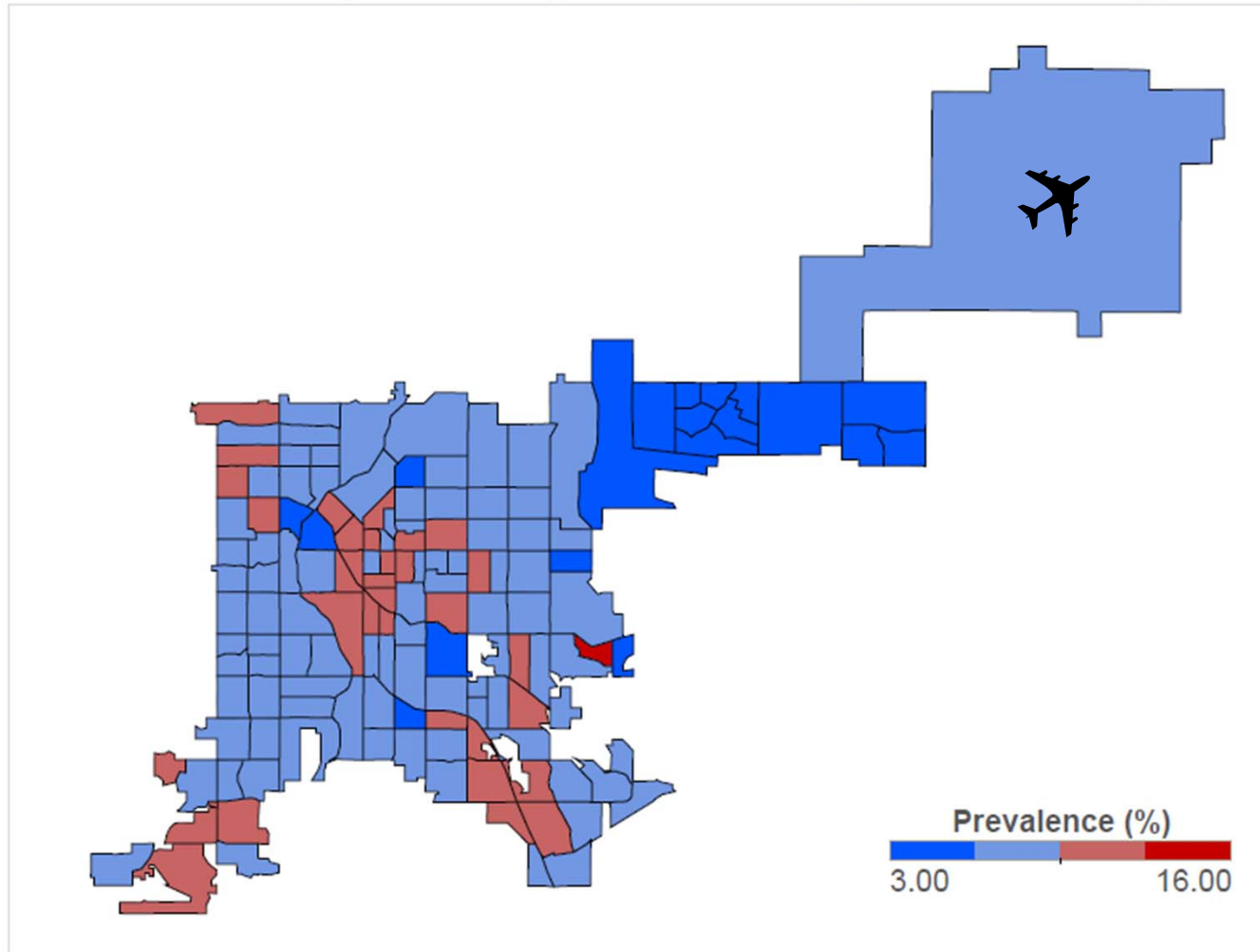
Background | Where We Are Going



CHORDS | Depression in Denver County



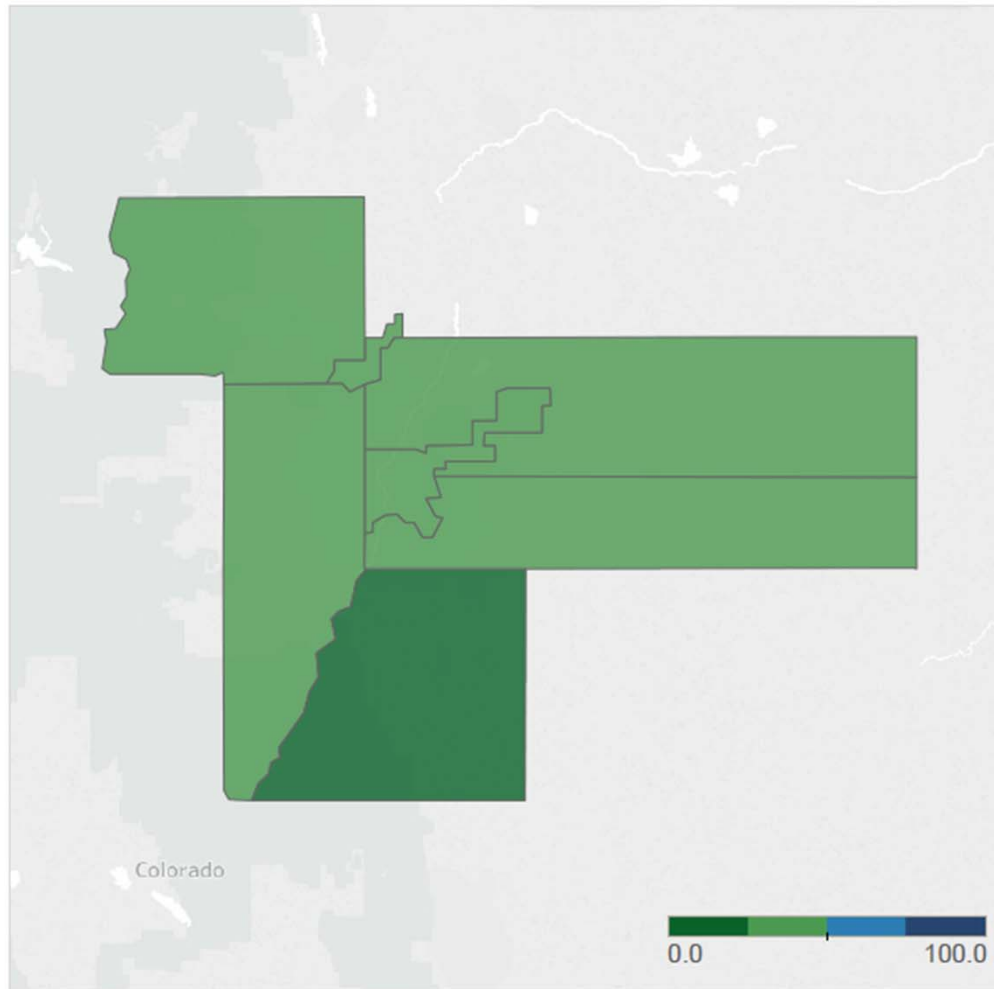
Prevalence of Depression by Census Tract, Denver County, 2015



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	Total Percent of ACS Population Estimate Captured in CHORDS
Adams	45.4
Arapahoe	25.6
Boulder	28.8
Broomfield	30.7
Denver	38.2
Douglas	19.1
Jefferson	26.2

Additional Resources



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?

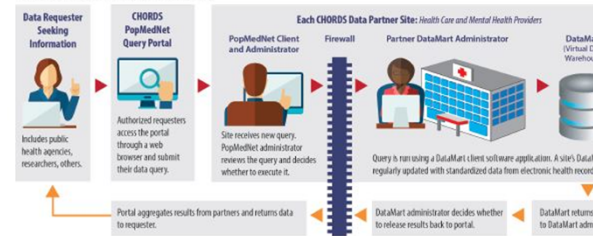
PopMedNet™ powers the data sharing in CHORDS powered by a secure software application that receives and sends data from partner sites, including from mental health partners. Partners organize EHR data into a common data model (a "virtual data warehouse" or VDW) and establish a connection to the CHORDS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

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

Why Become a Data Partner?

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

CHORDS Federated Query Overview



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

Contents

Overview

1. What is CHORDS?
2. What is the purpose of CHORDS?
3. Who are the current partners?
4. What kinds of health data are available?
5. Can my site contribute data to the CHORDS network?
6. What will CHORDS look like in the future?
7. What are CHORDS' governance principles?
8. What governance policies ensure data are safely and securely accessed and shared?

Public Health Monitoring

9. Who has access to CHORDS data?
10. How does CHORDS access health data for public health monitoring?
11. What are the current public health monitoring topics?

Health Research

12. How can CHORDS provide data to researchers?
13. What research initiatives are currently using CHORDS?
14. Can I use CHORDS to find/recruit patients to enroll in my clinical study?
15. What is the IRB process for studies using CHORDS?
16. Are there materials available to help me describe CHORDS in my grant application?
17. What is the authorship model for publishing studies that use CHORDS data?

Technical Infrastructure

18. How are data shared in CHORDS?
19. How does a site contribute data to CHORDS?

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

Key Issues

Key Issues / Community Health / Colorado Health Observation Regional Data Service

Colorado Health Observation Regional Data Service
September 3, 2016



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 and 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 assess *highest rate of tobacco use, or of depression?* Each health care organization retains full control of data 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



Questions?

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