Colorado Health Observation Regional Data Service (CHORDS)

Harmonizing Information for a Healthier Colorado

Summer 2017

Colorado Health Institute
CHORDS is a network conceived in 2011 that uses electronic health record (EHR) data to support public health evaluation, monitoring and research efforts.
CHORDS: A Primer

• **Data Partners:**
  Currently, 12 health provider organizations contribute data

• **Data Users:**
  Users are public health agencies serving the seven-county Denver Metro region

• **Goal:**
  Expanded use of EHR data to achieve public health goals through reliable and location-specific information
Neighborhood Level Data Enable Targeted Efforts

Estimated Prevalence of Children and Youth with Obesity (2012-2014): City and County of Denver

This map displays the percentage of children and youth 2-17 years of age with obesity, by census tract, based upon body mass index (BMI) measurements contributed to the Colorado BMI Monitoring System from multiple health care organizations. BMI was calculated from height and weight and plotted on the Centers for Disease Control and Prevention (CDC) male or female BMI-for-age growth chart to determine a percentile. Obesity was defined as a BMI at the 95th percentile or higher. The percentage with obesity was calculated for each census tract by dividing the number of children and youth with a BMI at the 95th percentile or higher by the total number of valid BMI measurements available in that census tract.

These data are comprised of children and youth 2-17 years of age who reside in the City and County of Denver. The total number of children and youth represented with valid BMI measurements is 79,493, or 60% of the total children and youth population of 133,508, as reported from the 5-year American Community Survey (2010-2014). Census tracts were designated as having insufficient data for display if: 1) the total population was fewer than 50 individuals; or 2) fewer than 50 valid BMI measurements were available; or 3) coverage was less than 20% of the population 2-17 years of age.
Participating Institutions

Data Users:
Denver Metro Public Health Agencies

Technology Partner:
University of Colorado Anschutz Medical Campus

Convener: CHI

Technology Partner:
CORHIO

Data Partners:
Health Care and Mental Health Partners
CHORDS Data Partners

**Health Systems**
- Children’s Hospital Colorado
  - Denver Health
- Kaiser Permanente Colorado

**Mental Health Centers**
- Mental Health Center of Denver
- Jefferson Center for Mental Health

**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
  - Salud Family Health Centers
    - Clinica Tepeyac
The Promise of Innovation

Today’s Data
- Claims
- Registries
- Surveys

CHORDS
- Electronic Health Records

The Future
Accurate, detailed, real-time data that will let public health be more targeted and effective
CHORDS Data Shared Securely

Query Service

- Secure Federated Query
- Standard/Virtual Data Warehouse

Standard/Virtual Data Warehouse

- Secure Federated Query
Enhancing Data Reliability

- Many existing data sources rely on self-reported measures
- CHORDS uses EHR data, accessing measurements entered by providers
Maintaining Patient Privacy

• CHORDS provides aggregated data for use by public health agencies

• Information cannot be traced back to individual patients

• Each data partner retains full control over their patients’ data
The Query Process

Data Requester Seeking Information
Includes public health agencies, researchers, others.

CHORDS PopMedNet Query Portal
Authorized requesters access the portal through a web browser and submit their data query.

Each CHORDS Data Partner Site: Health Care and Mental Health Providers
PopMedNet Client and Administrator
Site receives new query. PopMedNet administrator reviews the query and decides whether to execute it.

Partner DataMart Administrator
Query is run using a DataMart client software application. A site’s DataMart is regularly updated with standardized data from electronic health records.

DataMart (Virtual Data Warehouse)

Portal aggregates results from partners and returns data to requester.

DataMart administrator decides whether to release results back to portal.

DataMart returns results to DataMart administrator.
CHORDS Areas of Focus

• Body Mass Index/Obesity
• Cardiovascular Disease
• Diabetes
• Mental Health
• Opioids

Other public health topics will follow.
# Additional Resources

## CHORDS

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

**Contents**

<table>
<thead>
<tr>
<th>Overview</th>
<th>Contents</th>
</tr>
</thead>
</table>
| Overview | 1. What is CHORDS?  
| | Colorado Health Observation Regional Data Service (CHORDS) is a regional collaborative partnership between Colorado Health Institute, public health agencies, and other organizations.
| | 2. Why is CHORDS important?  
| | CHORDS helps to identify and address public health issues at the community level.
| | 3. How does CHORDS work?  
| | CHORDS provides a platform for data sharing and collaboration.
| | 4. What are the benefits of CHORDS?  
| | CHORDS benefits include:
| | - Improved data sharing and collaboration
| | - Enhanced public health response
| | - Increased community engagement

**Overview**

CHORDS collects, analyzes, and presents data from participating partners' electronic health records to inform public health decisions.

**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 inform public health decisions. CHORDS is a regional collaborative partnership between Colorado Health Institute, public health agencies, and other organizations.

### How Does CHORDS Work?

PopHealthCast powers the data sharing in CHORDS. It is powered by a secure software application that requests and receives data from partners only, including from mental health partners. Partners organize EHR data into a common data model of Virtual Data Enclaves (VDEs) and establish a connection to the CHORDS network using PopHealthCast.

In this distributed network, data partners retain full control over their data, deciding which data are available for sharing (which queries are approved and executed) and whether health information is returned to requesters and who is permitted to request queries. CHORDS adheres to HIPAA and 45CFR 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 health, hypertension, and other health issues. These data create a more comprehensive picture of health in communities.
Questions about CHORDS?
Contact Sara at schmitts@coloradohealthinstitute.org