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

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
• 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

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 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?

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 Providers

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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
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?

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.

Firewall

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)

DataMart administrator decides whether to release results back to portal.

Portal aggregates results from partners and returns data to requester.

DataMart returns results to DataMart administrator.

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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
• 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

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- Claims
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The Future
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CHORDS
- Electronic Health Records

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Prevalence of Depression by Census Tract, Denver County, 2015
CHORDS | Metro Denver Coverage

(i.e. CHORDS counts/ACS counts)

Category Total
☐ Show history

<table>
<thead>
<tr>
<th>County</th>
<th>Total Percent of ACS Population Estimate Captured in CHORDS</th>
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<tr>
<td>Adams</td>
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Additional Resources

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

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 and negotiate rates of disease or rehospitalization. Clinical health care providers retain full control back to individual patients.

In 2016, the Colorado Health Foundation awarded a two-year, $1.2 million grant to the Colorado Health Institute (CHI) with the goals of expanding the number of health care providers using CHORDS from nine to six and bringing on additional health care and mental health providers to contribute data. These include local public health agencies representing Adams, Kiowa, Boulder, Grand, Denver, Douglas, and Jefferson counties, as well as the University of Colorado-Denver Adult and Child Health Sciences (ACCORD), Denver Health and CHORDS, Colorado's largest health information exchange network.

CHORDS data contributors are: Children’s Hospital Colorado, Colorado Family Health Center, Clínica Teyacai, 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, South Metro Health Centers and the West Side Clinic operated by ColoradoExcel for the mandates.

How CHORDS Works?

PopulationNet® powers the data sharing in CHORDS powered by a secure software application that allows users to view data from partner sites, including the mental health partners. Partners organize EHR data into a common research model, or virtual database or VDM, and establish a connection to the CHORDS network using PopulationNet.

In this distributed network, data partners retain full control over how they decide which data are used for querying which queries are approved and what health data are retained for research and are permitted to submit queries. CHORDS adheres to HIPAA and other federal regulations, and exchanges data in a secure environment 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 chronic diseases and other health issues. This will provide a more comprehensive picture of health care in communities.

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

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. How can my data contribute to the data networks?
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?
9. Public Health Monitoring
10. Who has access to CHORDS data?
11. How can CHORDS access health data for public health monitoring?
12. What are the current public health monitoring topics?
13. Health Research
14. How can CHORDS provide data to researchers?
15. What research initiatives are currently using CHORDS?
16. Can I use CHORDS to find potential patients to enroll in my clinical study?
17. Are there materials available to help me describe CHORDS in my grant applications?
18. What is the purpose of CHORDS for publishing studies that use data from CHORDS?
19. Technical Infrastructure
20. How can data be shared in CHORDS?
Questions?

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