Food for Thought

How Occupational Surveillance could benefit from Electronic Health Records

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WESTON Conference
Denver, Colorado

Today's Goals

- Review the alignment between what data you need and what data you've got
- Talk through how EHR data might be able address some data gaps
- Describe 1 method for accessing EHR data

Why do occupational health surveillance?

- NIOSH studies trends in worker injuries and illnesses to improve worker safety and health by:
  - Tracking diseases, injuries and workplace exposures for further study
  - Identifying new and emerging problems in the workplace
  - Providing evidence used to direct intervention and prevention activities
  - Monitoring the overall impact of occupational health research

Background | Where We Are Now

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IIF News Releases

Injury and illness rates decline in 2015; high injury rate for nursing assistants
11/10/2016

Severe occupational injuries and illnesses decreased in 2015 to 94 cases per 10,000 private-sector workers and were about unchanged for state and local government workers. Injury and illness rates for private sector heavy and tractor-trailer truck drivers and nursing assistants declined.
HTML | PDF | RSS

Employer-reported injury and illness rate declined to 3.0 cases per 100 workers in 2015
10/27/2016

The approximately 2.9 million nonfatal workplace injuries and illnesses reported by private industry employers in 2015 resulted in a decline in the incidence rate to 3.0 cases per 100 equivalent full-time workers, compared to 3.2 cases in 2014.
HTML | PDF | RSS

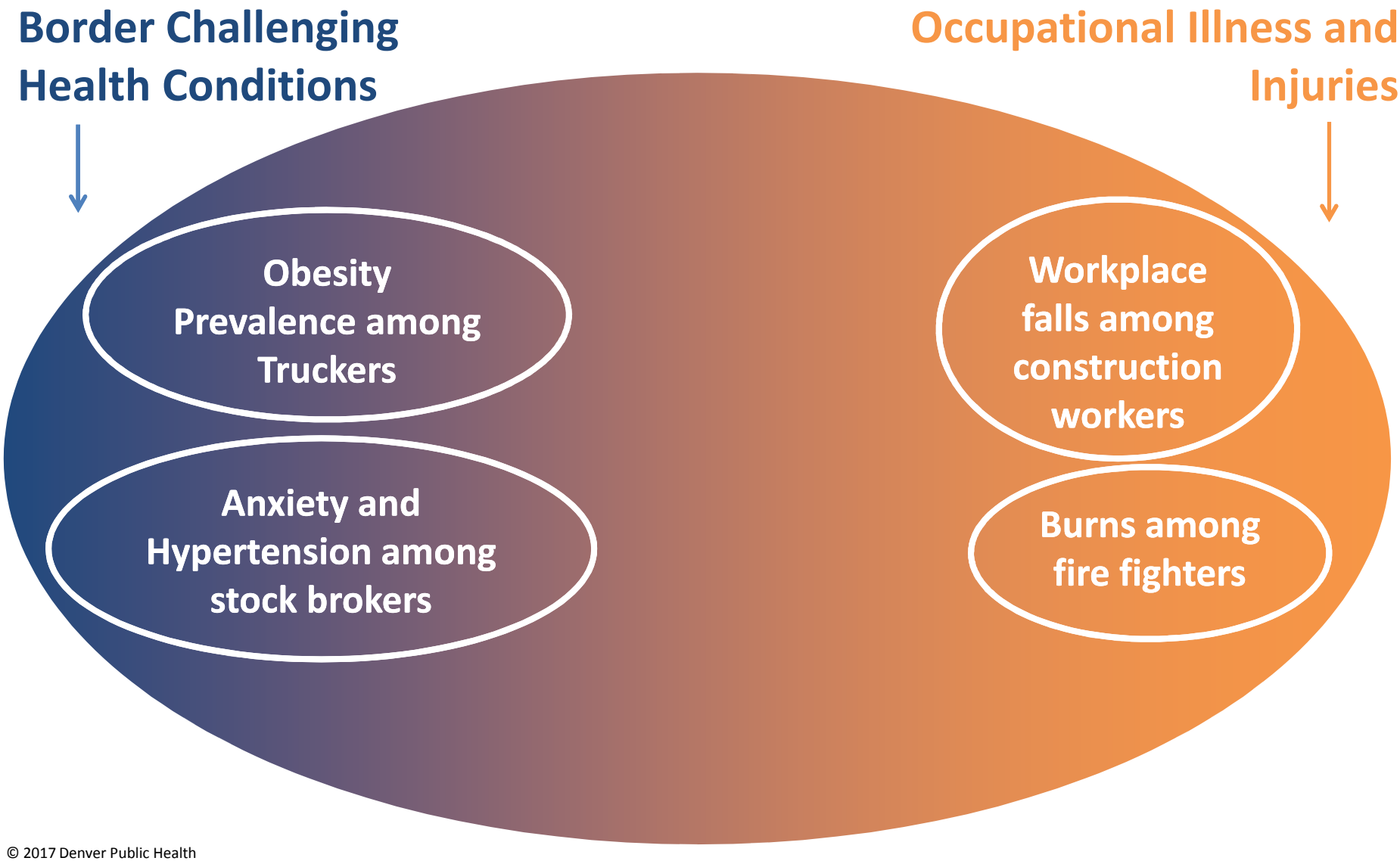
Total of 4,836 fatal work injuries in 2015, highest since 2008
12/16/2016

A total of 4,836 workers died from a work-related injury in the U.S. in 2015, the highest annual figure since 2008. Nearly 20 percent of fatally-injured workers were employed in the private construction industry.
HTML | PDF | RSS

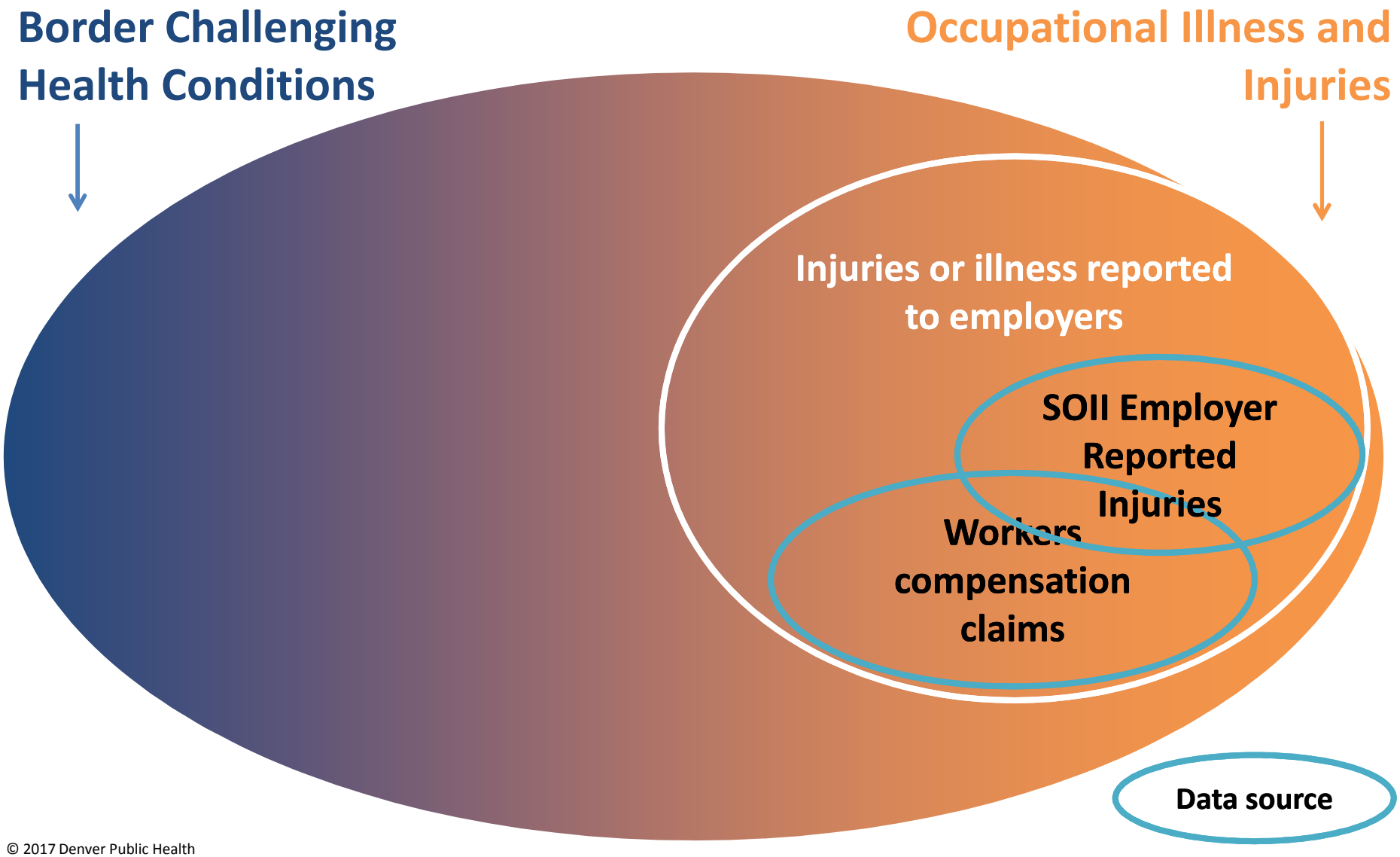
Schedule

- Schedule of upcoming releases and archived releases

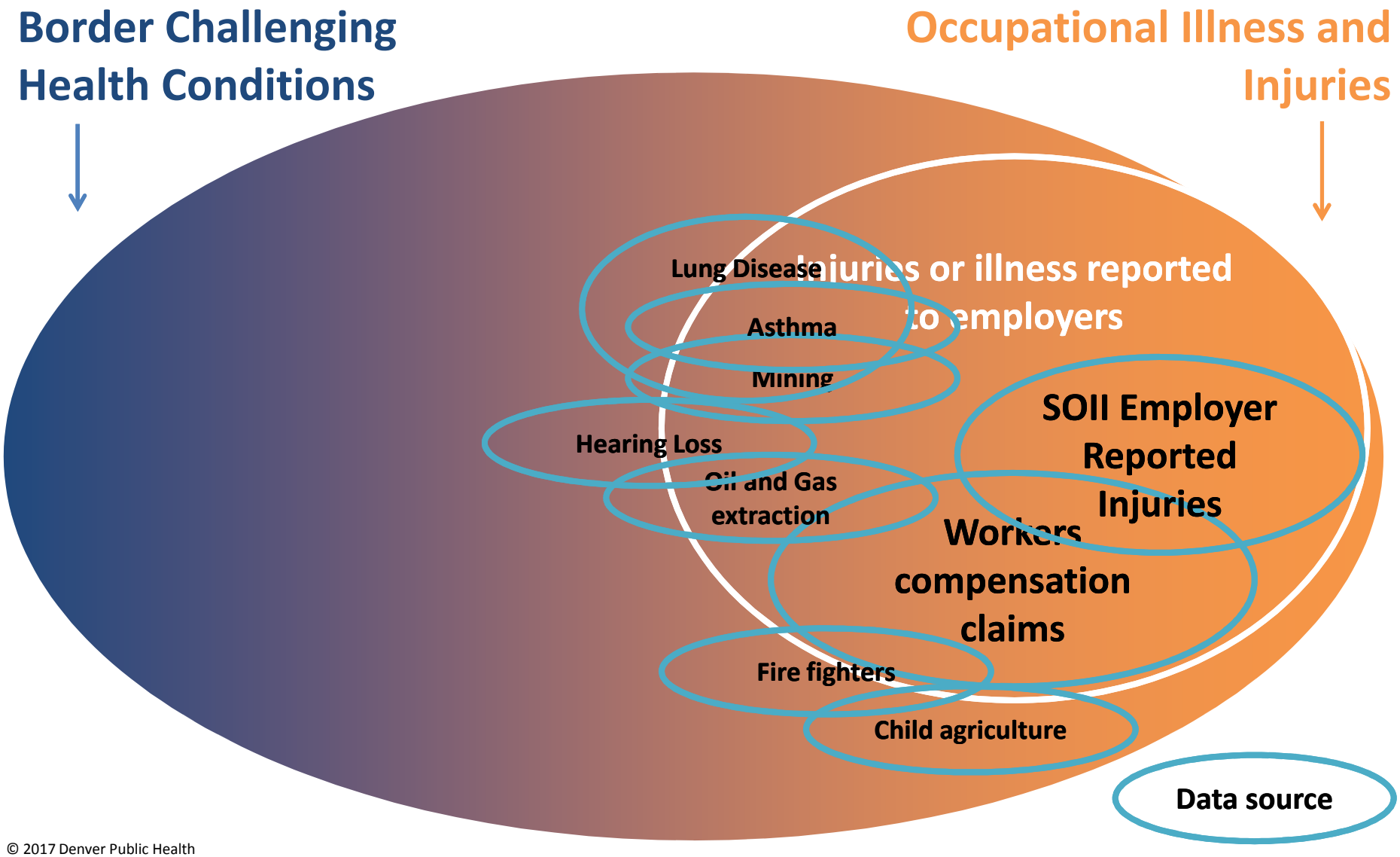
Surveillance Current State



Surveillance Current State



Surveillance Current State



Where are we now?

- The scope of occupational health surveillance has grown and evolved
- Existing occupational health surveillance data sources do not provide enough information
- Surveillance stakeholders have begun to explore how clinical data from electronic health records (EHRs) could be used to monitor health issues at the population level
- Should occupational health consider this resource?

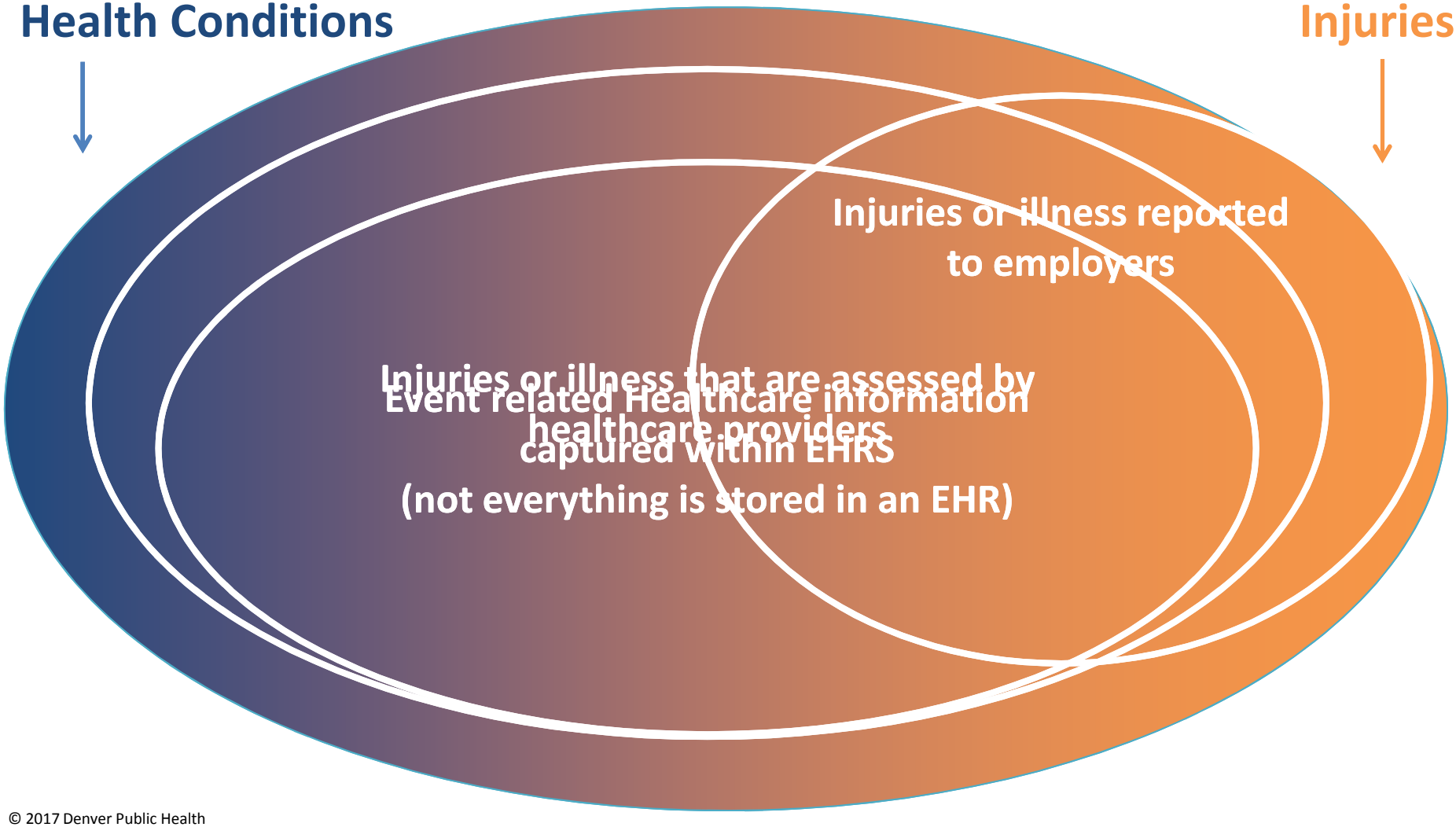
Advantages of EHR data?

- **Large** repository of systematically collected, structured, detailed clinical data
- Available near real time
- Can be assigned to a geographic location based on patient residence
- Naturally longitudinal
- Inclusive of low and high acuity events (twisted ankles, asthma, stroke, and TBI)

Possible Future State

Border Challenging Health Conditions

Occupational Illness and Injuries



Limitations of EHR Data for Occ Health

- **Finding the workers.** Occupation is not collected by providers or stored in most EHRs
- **Fragmented picture of care.** Individuals receive care across many institutions and occ clinics are often in specialty clinic settings
- **Identifying an occ event.** Few Providers are trained to identify occ illness or injury & EHRs do not currently have a mechanism to flag an occ illness or injury

How do you get EHR data?

EHR data can be accessed through partnerships with:

- A provider or healthcare system
- A health information exchange
- An EHR public health network
- A EHR vendor

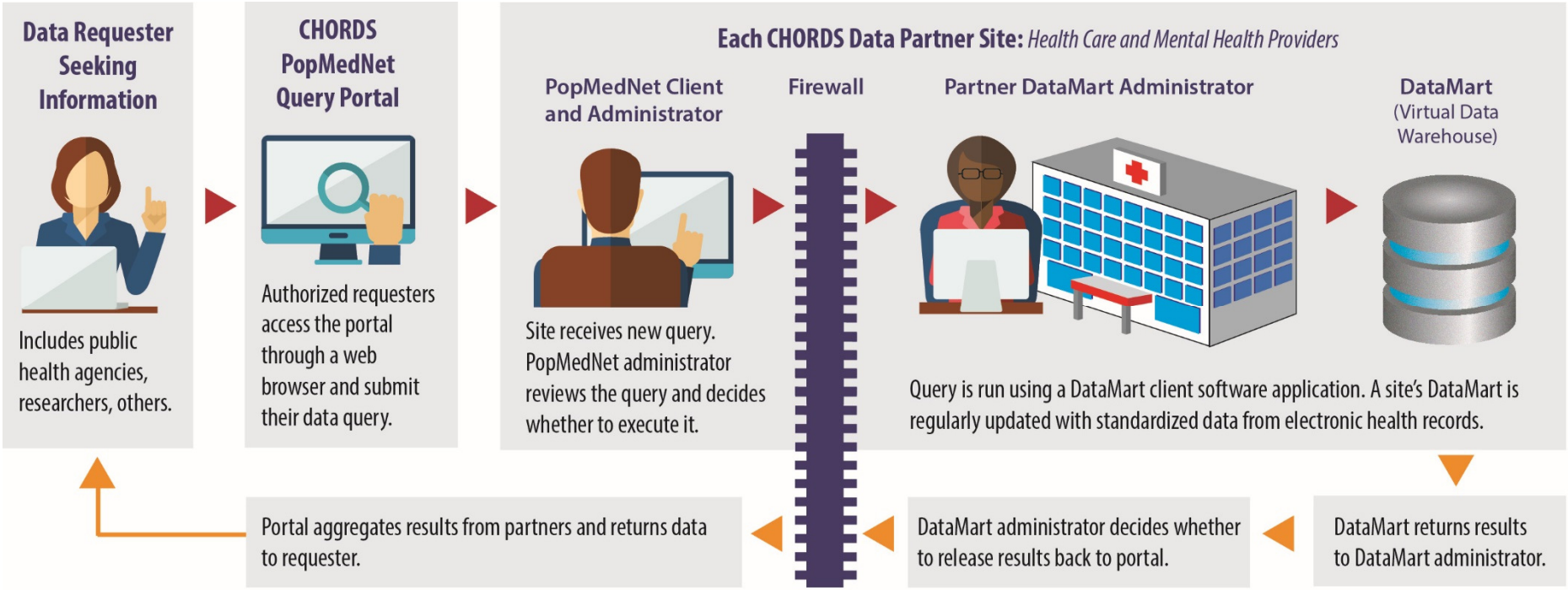
CHORDS | What is it?

- 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
  - Now includes data from 11 healthcare providers across the Denver metro area

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 health outcomes over time
- Integrates clinical, demographic, and place-based data

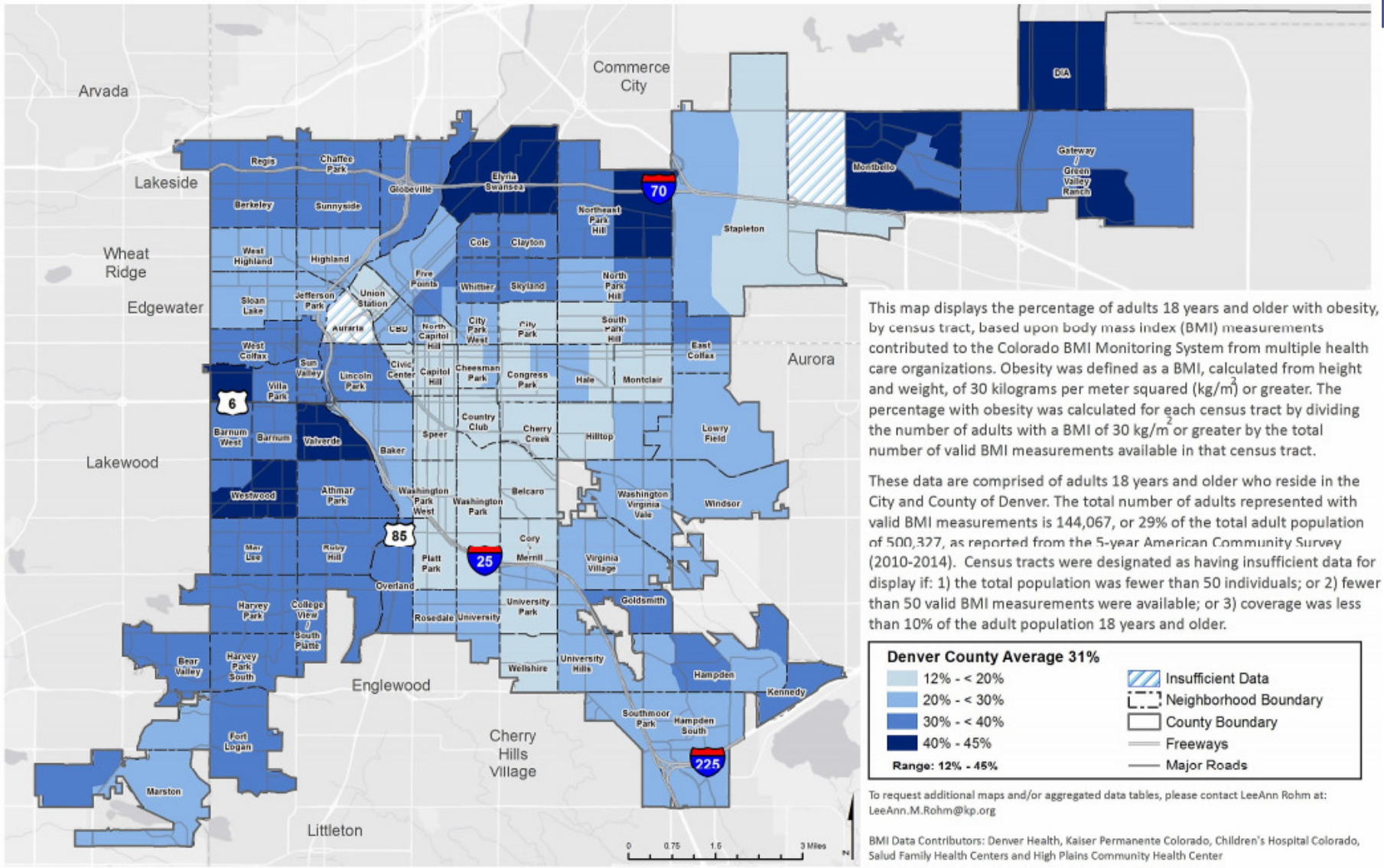
CHORDS | How does it retrieve data?



CHORDS | What data is available?

- EHR data from metro Denver organizations includes:
  - Demographics: Birth date, gender, race
  - Encounters: Date, encounter type
  - Vital Signs: Height, weight, blood pressure
  - Diagnosis: Diagnosis codes
  - Location: Patient's geocoded location
- Each year, CHORDS makes data on over half of Denver adults and children available or roughly 350,000 adults and 165,000 children.

Estimated Prevalence of Adults with Obesity (2012-2014): City and County of Denver, Colorado



This map displays the percentage of adults 18 years and older with obesity, by census tract, based upon body mass index (BMI) measurements contributed to the Colorado BMI Monitoring System from multiple health care organizations. Obesity was defined as a BMI, calculated from height and weight, of 30 kilograms per meter squared (kg/m^2) or greater. The percentage with obesity was calculated for each census tract by dividing the number of adults with a BMI of 30 kg/m^2 or greater by the total number of valid BMI measurements available in that census tract.

These data are comprised of adults 18 years and older who reside in the City and County of Denver. The total number of adults represented with valid BMI measurements is 144,067, or 29% of the total adult population of 500,327, 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 10% of the adult population 18 years and older.

Denver County Average 31%

- 12% - < 20%
- 20% - < 30%
- 30% - < 40%
- 40% - 45%

Range: 12% - 45%

- Insufficient Data
- Neighborhood Boundary
- County Boundary
- Freeways
- Major Roads

To request additional maps and/or aggregated data tables, please contact LeeAnn Rohm at: LeeAnn.M.Rohm@kp.org

BMI Data Contributors: Denver Health, Kaiser Permanente Colorado, Children's Hospital Colorado, Salud Family Health Centers and High Plains Community Health Center

Census Tract Boundary Data: US Census 2010
Map Created March 2016

The Colorado Department of Public Health and Environment provides data hosting and cartographic services for the Colorado BMI Monitoring System.

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Questions?

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