

Below is a list of sources and variable definitions for the Root Causes dashboards and maps.

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## Data Sources & Definitions

### Age

**Variable:** Median Age

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Median age by census tract

**Variable:** Age Groups

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population in each age group

### Citizenship

**Variable:** U.S. Citizens

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population that is a U.S. citizen by birth or naturalization

**Variable:** Legal Permanent Residents of the U.S.

**Source:** CHI analysis of 2014-2018 American Community Survey Five-Year IPUMS Data File; Passel, J (2006). The Size and Characteristics of the Unauthorized Migrant Population in the U.S.: Estimates Based on the March 2005 Current Population Survey. Pew Hispanic Center Research Report. Crosswalked using Missouri Census Data Center "Geocorr 2014: Geographic Correspondence Engine."

**Website:** <https://ipums.org/>; <http://www.pewhispanic.org/2006/03/07/size-and-characteristics-of-the-unauthorized-migrant-population-in-the-us>;  
<http://mcdc.missouri.edu/applications/geocorr2014.html>

**Definition:** Percentage of census tract population that is a non-citizen legal permanent resident of the U.S. All non-citizens who were not identified as immigrants without documentation (see below) are considered legal permanent residents.

**Variable:** Immigrants without Documentation

**Source:** CHI analysis of 2014-2018 American Community Survey Five-Year IPUMS Data File; Passel, J (2006). The Size and Characteristics of the Unauthorized Migrant Population in the U.S.: Estimates Based on the March 2005 Current Population Survey. Pew Hispanic Center Research Report. Crosswalked using Missouri Census Data Center "Geocorr 2014: Geographic Correspondence Engine."

**Website:** <https://ipums.org/>; <http://www.pewhispanic.org/2006/03/07/size-and-characteristics-of-the-unauthorized-migrant-population-in-the-us>;  
<http://mcdc.missouri.edu/applications/geocorr2014.html>

**Definition:** Percentage of census tract population that is an immigrant without documentation. Note that the American Community Survey contains variables on citizenship but not on whether a person has legal documentation status. CHI developed a method for estimating documentation status based on a Pew Hispanic Center report describing the characteristics of the undocumented immigrant population in the U.S. CHI created a logistic regression model of the likelihood that a non-citizen was an undocumented immigrant based on these characteristics. For example, Pew's report estimated that 49 percent of undocumented immigrants in the United States are adult men, compared with 44 percent of non-citizens who have legal documentation. Therefore, CHI estimated a non-citizen was 12.5 percent more likely to lack legal documentation if he is an adult male — the difference between 49 percent and 44 percent. The full model was based on age, sex, employment status, and country of origin. Because individual-level data were required to build this model, estimates were developed using the IPUMS public use microdata area files. Census tract estimates were developed by crosswalking these microdata areas using a methodology developed by the University of Missouri.

## Crime & Violence

**Variable:** Juvenile Arrest Rate per 1,000 Youth

**Source:** 2018 Colorado Bureau of Investigation; 2014-2018 American Community Survey Five-Year Files

**Website:** <https://www.colorado.gov/pacific/dcj-ors/ors-crimestats>

**Definition:** Number of juvenile arrests by county per 1,000 youth ages 10 to 17 by county. Every census tract within a county was assigned that county's value.

**Variable:** Homicide Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Age-adjusted rate of homicide per 100,000 residents per census tract

**Variable:** Violent Death Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Age-adjusted rate of violent death per 100,000 residents per census tract. Violent deaths include homicides, suicides, and unintentional firearm fatalities

### Education & Employment

**Variable:** High School Diploma or More

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population age 25 or older with at least a high school diploma or equivalent

**Variable:** Less Than a High School Diploma

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population age 25 or older without a high school diploma or equivalent

**Variable:** Employment Rate

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract civilian labor force age 16 or older that is employed

**Variable:** Unemployment Rate

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract civilian labor force age 16 or older that is unemployed

### Sex

**Variable:** Male

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population that is male

**Variable:** Female

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population that is female

## Mental Health

**Variable:** Good Mental Health

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported having seven or fewer days of poor mental health in the past month. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

**Variable:** Poor Mental Health

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported having eight or more days of poor mental health in the past month. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

## Health Care

**Variable:** Insured Rate

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported having health insurance coverage. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

**Variable:** Uninsured Rate

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported not having health insurance coverage. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

**Variable:** Physicians per 1,000 Residents

**Source:** Colorado Department of Regulatory Agencies 2019 roster; 2014-2018 American Community Survey Five-Year Files

**Website:** <https://apps.colorado.gov/dora/licensing/Lookup/GenerateRoster.aspx>

**Definition:** Number of actively-licensed physicians in a county per 1,000 county residents. Every census tract within a county was assigned that county's value.



**Variable:** Mental Health Providers per 1,000 Residents

**Source:** Colorado Department of Regulatory Agencies 2019 roster; 2014-2018 American Community Survey Five-Year Files

**Website:** <https://apps.colorado.gov/dora/licensing/Lookup/GenerateRoster.aspx>

**Definition:** Number of actively-licensed mental health providers in a county per 1,000 county residents. Mental health providers include licensed clinical social workers, licensed social workers, certified addiction counselors, licensed addiction counselors, registered psychotherapists, and licensed psychologists. Every census tract within a county was assigned that county's value.

## Housing & Environment

**Variable:** Housing Stable

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported that they are not concerned about having a place to live over the next two months. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

**Variable:** Not Housing Stable

**Source:** 2019 Colorado Health Access Survey

**Website:** <https://www.coloradohealthinstitute.org/research/CHAS>

**Definition:** Percentage of census tract population that reported that they are concerned about having a place to live over the next two months. The Colorado Health Access Survey does not collect data at the census tract level, so a small-area estimation regression model was used to arrive at these estimates.

**Variable:** Homeownership

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of occupied housing units in each census tract that are owned by the occupant

**Variable:** Renting

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of occupied housing units in each census tract that are rented or occupied without payment by the occupant

**Variable:** Median Monthly Housing Cost

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Median cost of housing by census tract. Includes rent, mortgages, and utilities.

**Variable:** Median Home Value

**Source:** December 2019 Zillow ZTRAX

**Website:** <https://www.zillow.com/research/ztrax/>

**Definition:** Median home value by census tract. Zillow reports home values at the ZIP code, not census tract, level. A crosswalk was done to arrive at census tract estimates.

**Variable:** Living Alone

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population that lives alone

**Variable:** Not Living Alone

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population that does not live alone

**Variable:** Living in Overcrowded Homes

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households in a census tract that have more than one occupant per room

**Variable:** Not Living in Overcrowded Homes

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households in a census tract that have one occupant per room or less

**Variable:** Internet Access

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract that have internet access

**Variable:** No Internet Access

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract that do not have internet access

**Variable:** Air Quality Index

**Source:** 2019 Environmental Protection Agency Air Quality Index Report

**Website:** [https://aq5.epa.gov/aq5web/airdata/download\\_files.html#eighthour](https://aq5.epa.gov/aq5web/airdata/download_files.html#eighthour)

**Definition:** Median Air Quality Index by county. The index measures air quality across five metrics: ground-level ozone, particle pollution, carbon monoxide, sulfur dioxide, and nitrogen dioxide. While data are available by census tract, the county-level values are generally considered more reliable.

## Income

**Variable:** Median Income

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Median household income by census tract

**Variable:** At or Below Federal Poverty Level

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract with incomes at or below 100 percent of the federal poverty level

**Variable:** Above Federal Poverty Level

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract with incomes above 100 percent of the federal poverty level

**Variable:** At or Below 200 Percent of Federal Poverty Level

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract with incomes at or below 200 percent of the federal poverty level

**Variable:** Above 200 Percent of Federal Poverty Level

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of households by census tract with incomes above 200 percent of the federal poverty level

**Variable:** Gini Index of Income Inequality

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** A statistical measure of income inequity where 0 represents perfect equality and 1 represents perfect inequality.

## Other Health Outcomes

**Variable:** Life Expectancy

**Source:** 2015 U.S. Small-area Life Expectancy Estimates Project (USALEEP), Centers for Disease Control

**Website:** <https://www.cdc.gov/nchs/nvss/usaleep/usaleep.html>

**Definition:** Life expectancy in years by census tract

**Variable:** Fertility Rate per 1,000

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment, custom data pull

**Website:** <https://www.colorado.gov/cdphe>

**Definition:** Number of births per 1,000 females by census tract

**Variable:** Teen Birth Rate per 1,000

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment, custom data pull

**Website:** <https://www.colorado.gov/cdphe>

**Definition:** Number of births to teens ages 15 to 19 per 1,000 females ages 15 to 19 by census tract

**Variable:** Low Birthweight Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Number of low birthweight singleton births as a percentage of all singleton births. Low birthweight births are those where the baby weighs less than 2,500 grams (5 pounds, 8 ounces).

**Variable:** Overall Mortality Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Age-adjusted rate of death from any cause per 100,000 residents per census tract

**Variable:** Suicide Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Age-adjusted rate of suicide per 100,000 residents per census tract

**Variable:** Firearm Mortality Rate

**Source:** 2014-2018 Vital Statistics, Colorado Department of Public Health and Environment

**Website:** <https://data-cdphe.opendata.arcgis.com/>

**Definition:** Age-adjusted rate of firearm death per 100,000 residents per census tract. Includes both intentional firearm deaths (suicides and homicides) as well as unintentional deaths

## Race, Ethnicity, and Language

**Variable:** Race / Ethnicity Groups

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population in each race/ethnicity group

**Variable:** Racial Segregation Index

**Source:** Robert Wood Johnson Foundation County Health Rankings

**Website:** <https://www.countyhealthrankings.org/>

**Definition:** Index ranging from 0 (complete integration) to 100 (complete segregation). The index is based on the percentage of white or non-white residents who would need to move to different census tracts in order for all census tracts to have racial distributions matching that of the entire county. By nature of the definition, these data must be reported at the county level. Every census tract within a county was assigned that county's value.

**Variable:** Speaks English at Home

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population speaking English at home

**Variable:** Does not Speak English at Home

**Source:** 2014-2018 American Community Survey Five-Year Files

**Website:** <https://data.census.gov/cedsci/>

**Definition:** Percentage of census tract population not speaking English at home

#### Substance Availability

**Variable:** Marijuana Retailers per 1,000 Residents

**Source:** Colorado Department of Regulatory Agencies

**Website:** <https://www.colorado.gov/pacific/enforcement/med-licensed-facilities>

**Definition:** Number of licensed marijuana retailers (medicinal or recreational) per 1,000 census tract residents

**Variable:** Alcohol Retailers per 1,000 Residents

**Source:** Colorado Department of Regulatory Agencies

**Website:** <https://www.colorado.gov/pacific/enforcement/liquor-license-lists>

**Definition:** Number of licensed alcohol retailers per 1,000 census tract residents

**Variable:** Tobacco Retailers per 1,000 Residents

**Source:** Colorado Department of Regulatory Agencies

**Website:** <https://trac-cdphe.opendata.arcgis.com/>

**Definition:** Number of licensed tobacco retailers per 1,000 census tract residents