

# Medicaid and Commercial Insurance Colorado Access to Care Index Data Sources and Methods

**JULY 2019**

The Colorado Health Institute (CHI) followed four guiding principles when selecting indicators for the Medicaid and Commercial Insurance Colorado Access to Care Index. Metrics must be:

1. Relevant measures of access to care;
2. Available for Medicaid enrollees and people with commercial insurance;
3. Available at the county level whenever possible; and
4. Able to be trended over time.

This document contains a description of methods used to calculate scores. It also includes descriptions of data sets and indicators used in each of the three domains of the Medicaid and Commercial Insurance Colorado Access to Care Index — Potential Access, Perception and Experiences, and Realized Access.

General notes:

- Unless otherwise indicated, all survey-based estimates reflect Coloradans ages 0-64 years.
- When county-level data were not available, the health statistics region's estimate was used for the county.

## Data Sets

Data for the metrics for Medicaid and Commercial Insurance Colorado Access to Care Index come from the seven sources below.

### Colorado Health Access Survey

The Colorado Health Access Survey (CHAS)

is the premier source of information on health insurance coverage, access to care and use of care in Colorado. More than 10,000 randomly selected households participate, and data are statistically weighted to be representative of the state's population. The CHAS is fielded, analyzed and managed by CHI. The CHAS is a biennial survey, fielded in 2009, 2011, 2013, 2015 and 2017. The 2017 survey was funded by The Colorado Trust with additional support from the Colorado Health Foundation and the Department of Health Care Policy and Financing. More information is available at <https://www.coloradohealthinstitute.org/research/colorado-health-access-survey>.

### Colorado Health Systems Directory

The Primary Care Office at the Colorado Department of Public Health and Environment (CDPHE) developed and administers the Colorado Health Systems Directory. The database is compiled from a variety of sources and provides comprehensive data on licensed clinicians and health care sites in Colorado. It includes providers who are currently practicing. Providers are assigned to a county in the Access to Care Index based on the address in their record. This address is frequently where they practice but sometimes where they live. The Medicaid and Commercial Insurance Access to Care Index uses a provider list pulled from the directory in September 2018. CHI also used additional data — clinical contact hours and proportion of patients enrolled in Medicaid — from the shortage designation surveys that the Primary Care Office administers. More information about the Colorado Health Systems Directory is available at <https://www.colorado.gov/pacific/cdphe/chsd>.

## Colorado Department of Health Care Policy and Financing

The Colorado Department of Health Care Policy and Financing (HCPF) administers Health First Colorado (Colorado's Medicaid program) and the Child Health Plan Plus (CHP+), as well as a variety of other programs for Coloradans with low household incomes, including families, children, pregnant women, the elderly, people with disabilities and adults without children. HCPF administrative Medicaid and CHP+ caseload data were used for this analysis. More information is available at <http://colorado.gov/hcpf>.

## Connect for Health Colorado

Connect for Health Colorado is a public, nonprofit entity established by the Colorado General Assembly in 2011 to create and operate a health insurance marketplace. It opened for business on Oct. 1, 2013, for people, families and small employers across Colorado to purchase health insurance and get financial help to reduce costs. CHI used Connect for Health Colorado's enrollment counts for this project. More information is available at <http://connectforhealthco.com/>.

## American Community Survey

The American Community Survey (ACS) is an annual survey of more than 50,000 Coloradans on topics ranging from housing status to income to employment and other demographics. Data are weighted to be representative of the population. The ACS is produced by the United States Census Bureau. Data from 2016 were used for this analysis. More information is available at <https://www.census.gov/programs-surveys/acs/>.

## Colorado All Payer Claims Database

Colorado's All Payer Claims Database (APCD) is the state's most comprehensive source of data on health care claims. It includes information from the majority of private health care plans, Medicare, and Health First Colorado (the state's Medicaid program). The APCD is maintained by the Center for Improving Value in Health Care (CIVHC). Data are collected on an ongoing basis, and data on specified public metrics are provided annually. The most recent year of public data from the APCD is 2015. More information is available at <http://www.civhc.org/>.

## Pregnancy Risk Assessment Monitoring System

The Colorado Pregnancy Risk Assessment Monitoring

System (PRAMS) is an annual survey funded by the Centers for Disease Control and Prevention (CDC) and administered by the Colorado Department of Public Health and the Environment. The PRAMS is designed to monitor the experiences of Colorado women before, during and after pregnancy. The survey is mailed to a sample of women who have recently given birth. Data are weighed to be representative of Colorado's population of women who recently gave birth. While the PRAMS is administered annually, its small sample size required CHI to combine three years of data in order to have reliable estimates. The most recent data set available is 2013 through 2016. More information is available at <https://www.colorado.gov/pacific/cdphe/pregnancysurvey>.

## Indicator List

### Potential Access

#### 1. Percentage of Eligible Coloradans Enrolled in Medicaid or Tax Credits

- Year used in scoring: 2016
- Source: 2016 ACS; 2016 HCPF and Connect for Health Colorado Caseload Data
- Description: For Medicaid, this metric is the percentage of people ages 0-64 enrolled of those eligible. Eligibility for Medicaid is defined as:
  - Children ages 0-18 under 148 percent of the federal poverty level (FPL) and who are citizens or legal residents
  - Adults ages 19-64 with incomes under 139 percent of FPL and who are citizens or legal residents for at least five years

The total number of eligible is the sum of each group of uninsured Coloradans and those enrolled in Health First Colorado – the state's Medicaid program.

For commercial insurance, this metric is the percentage of people receiving tax credits through Colorado's health insurance marketplace (Connect for Health Colorado) of those eligible for them. Eligibility for advance premium tax credits is defined as:

- Children ages 0-18 between 266 – 400 percent of FPL who are citizens or legal residents. Note that children whose families have income between 148

and 266 percent of FPL are eligible for the Child Health Plan Plus program. CHI excluded them from the Medicaid and Commercial Insurance Index.

- Adults ages 19-64 under 139 percent of FPL who are non-citizen legal residents for fewer than five years
- Adults ages 19-64 with incomes between 139 – 400 percent of FPL who are citizens or non-citizen legal residents

CHI used estimates from the 2015 Medical Expenditure Panel Survey (MEPS) and the Colorado Health Access Survey to estimate the proportion of commercially insured people who have an offer of affordable employer-sponsored insurance, making them ineligible for the advance premium tax credits.

- Population: Those eligible for Medicaid or those eligible for tax credits
- Geography: County

## 2. Primary Care Physicians

- Year used in scoring: 2018
- Source: Colorado Health Systems Directory (CDPHE); Medicaid caseload (HCPF); commercial insurance data (ACS)
- Description:
  - Medicaid: Ratio of primary care physician FTE (with at least one Medicaid claim in the past 12 months) to people enrolled in Medicaid
  - Commercial Insurance: Ratio of primary care physician FTE who submitted any claim to people enrolled in commercial insurance
- Geography: County
- Primary care physicians are defined as physicians who submitted at least one claim in the past 12 months and practice in general practice, family medicine, internal medicine, or pediatrics. OBGYNs are not included.

## 3. Nurse Practitioners (NPs) and Physician Assistants (PAs)

- Year used in scoring: 2018
- Source: Colorado Health Systems Directory (CDPHE); commercial insurance data (ACS)
- Description:
  - Medicaid: Ratio of NP and PA FTE (with at least one Medicaid claim in the past 12 months) to people enrolled in Medicaid.
  - Commercial Insurance: This data point is not included for commercial insurance. The data did not reflect a complete representation of the providers.
- Geography: County

## 4. Dentists

- Year used in scoring: 2018
- Source: Colorado Health Systems Directory (CDPHE)
- Description:
  - Medicaid: Ratio of dentist FTE (with at least one Medicaid claim in the past 12 months) to people enrolled in Medicaid
  - Commercial Insurance: Ratio of dentist FTE to people enrolled in commercial health insurance
- Geography: County

## 5. Behavioral Health Providers

- Year used in scoring: 2018
- Source: Colorado Health Systems Directory (CDPHE)
- Description:
  - Medicaid: This data point is not included for Medicaid. The data on behavioral health providers was incomplete based on how they billed Medicaid.
  - Commercial Insurance: Ratio of behavioral health provider FTE to people enrolled in commercial insurance.
- Geography: County
- Behavioral health providers include social workers, counselors, certified addiction counselors, psychologists, and psychiatrists.

## 6. Average Wait Time for Specialist Visit

- Year used in scoring: 2017
- Source: CHAS
- Description: Average number of days to wait for a specialist appointment
- Population: Medicaid enrollees or people with commercial insurance who had or tried to get a specialist visit in the past year
- Geography: Health Statistics Regions

## 7. Average Wait Time for General Doctor Visit

- Year used in scoring: 2017
- Source: CHAS
- Description: Average number of days to wait for a general doctor appointment
- Population: Medicaid enrollees or people with commercial insurance who had or tried to get a general doctor visit in the past year
- Geography: Health Statistics Regions

## 8. Could Not Get an Appointment Because Provider Was Not Accepting Your Insurance Type

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who could not get an appointment at some time in the past year because provider was not accepting their insurance
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

## 9. Could Not Get an Appointment Because Provider Was Not Accepting New Patients

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who could not

get an appointment at some time in the past year because provider was not accepting new patients

- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

## Perceptions and Experiences

### 1. Did Not Get Needed Doctor Care Due to Cost

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who did not get needed doctor care due to cost in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

### 2. Did Not Get Needed Specialist Care Due to Cost

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who did not get needed specialist care due to cost in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

### 3. Did Not Get Needed Dental Care Due to Cost

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who did not get needed dental care due to cost in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

#### **4. Did Not Fill a Prescription Due to Cost**

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who did not fill a prescription due to cost in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

#### **5. Could Not Get an Appointment Because Could Not Take Time Off Work**

- Year used in scoring: 2013-2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who could not get an appointment because they or a family member could not take off from work
- Population: Medicaid enrollees or people with commercial insurance who are currently employed
- Geography: Statewide
- The combined data for 2013, 2015, and 2017 are used for this metric for commercial insurance. The combined data for 2013 and 2015 were used for past years. The data for 2017 was used for scoring for Medicaid. Only a statewide estimate could be produced for this metric, so there is no variation across counties.

#### **6. Could Not Get an Appointment Because Could Not Find Child Care**

- Year used in scoring: 2013-2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who could not get an appointment in the past year because they could not find child care
- Population: Medicaid enrollees or people with commercial insurance with a child ages 0 to 14 years
- Geography: Statewide
- The combined data for 2013, 2015, and 2017 are used for this metric. Only a statewide estimate could be produced for this metric, so there is no variation across counties.

#### **7. Did Not Get Needed Care Because of Transportation Issues**

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who did not get needed care in the past year because they lacked transportation or the doctor's office was too far away
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

#### **8. Had a Usual Source of Care**

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who reported having a place they usually go for health care. The emergency room was not included in this definition.
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

#### **9. Treated Respectfully by Provider**

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who reported that they had been treated disrespectfully or judged unfairly by a provider in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

## Realized Access

### 1. Visited a Dentist or Dental Hygienist

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who visited a dentist or dental hygienist in the past year
- Population: Medicaid enrollees or people with commercial insurance
- Geography: Health Statistics Regions

### 2. Timely Prenatal Care

- Years used in scoring: 2013-2016
- Source: PRAMS
- Description: Percentage of pregnancies for which women received prenatal care in the first trimester (excludes those for whom prenatal care initiation data are missing)
- Population: Pregnant Medicaid enrollees or people with commercial insurance
- Geography: County

### 3. Well-Child Visit

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance ages 0 to 20 who had a preventive care visit in the past year
- Population: Medicaid enrollees or people with commercial insurance ages 0-20
- Geography: Health Statistics Regions

### 4. Did Not Get Needed Mental Health Care

- Year used in scoring: 2017
- Source: CHAS
- Description: Percentage of Medicaid enrollees or people with commercial insurance who reported needing mental health care in the past year but did not receive it

- Population: Medicaid enrollees or people with commercial insurance ages 5 years and older
- Geography: Health Statistics Regions

### 5. Appropriate Asthma Prescription

- Year used in scoring: 2015
- Source: APCD
- Description: Percentage of patients 5 to 64 years old identified as having persistent asthma and appropriately prescribed medication (at least one asthma controller) during the previous year
- Population: Medicaid enrollees or people with commercial insurance ages 5 to 64 with persistent asthma
- Geography: County

### 6. Breast Cancer Screening

- Year used in scoring: 2015
- Source: APCD
- Description: Percentage of women ages 50-74 who had a mammogram to screen for breast cancer in the previous two years
- Population: Medicaid enrollees or people with commercial insurance, women ages 50-74
- Geography: County

### 7. Cervical Cancer Screening

- Year used in scoring: 2015
- Source: APCD
- Description: Percentage of women 21 to 29 years old with one or more Pap test screenings for cervical cancer during the previous three years, or the percentage of women 30 to 64 years old with cytology and human papillomavirus co-testing during the previous five years
- Population: Medicaid enrollees or people with commercial insurance, women ages 21 to 64
- Geography: County

## 8. Colorectal Cancer Screening

- Year used in scoring: 2015
- Source: APCD
- Description: Percentage of Medicaid enrollees or people with commercial insurance 50 to 75 years old who had a fecal occult blood or fecal immunological test during the past year, a flexible sigmoidoscopy during the previous five years, or a colonoscopy during the previous 10 years
- Population: Medicaid enrollees or people with commercial insurance ages 50 to 75
- Geography: County

## Calculating the Scores

The scoring methodology was modeled after the National Health Security Preparedness Index, a collaboration of the Association of State and Territorial Health Officials, the Robert Wood Johnson Foundation, and others.

The first step in developing these scores is establishing an aspirational benchmark. For most metrics, this benchmark was 100 percent — for example, a goal of 100 percent of people with a usual source of care. Workforce benchmarks are the exception. To create an aspirational benchmark for workforce, CHI determined the optimal provider-to-population ratio. Those benchmarks are discussed in more detail in the “Provider Availability Metrics” section.

Next, CHI compiled the most recent data available for each of the metrics within the Potential Access, Perceptions and Experiences, and Realized Access sections.

CHI then converted each indicator into a score on a scale of zero to 10, where zero represents no access to care and 10 represents universal access. For example, a usual source of care percentage of 88.1 becomes a score of 8.81. Some metrics had to be transformed to be directionally consistent.

CHI determined the score for each of the three domains — Potential Access, Perceptions and Experiences, and Realized Access — by calculating the average score of all metrics within a domain. All metrics were treated as equally important; CHI did not weigh some metrics higher than others.

Finally, the average of the three component scores serves as the overall Medicaid and Commercial Insurance Colorado Access to Care Index score.

## Provider Availability Metrics

Provider availability was calculated using CDPHE’s Colorado Health Systems Directory. CHI and CDPHE developed criteria to include providers. Providers were considered to be Medicaid providers if they had a Medicaid ID and submitted at least one claim in the previous 12 months (May 2017 through May 2018).

Next, because many providers do not work full time, CHI adjusted the provider counts by applying the number of work hours. A full-time provider was considered to maintain 40 hours of clinical contact hours per week. CHI used data from CDPHE’s health professional shortage designation surveys to apply this estimate.

To calculate ratios of Medicaid enrollees per full-time provider, CHI borrowed benchmarks designated in the state Medicaid contract with the Regional Accountable Entities (RAEs). The aspirational benchmarks for primary care physicians, dentists, and behavioral health providers is 1,800:1, and the benchmark for nurse practitioners and physician assistants is 1,200:1.

To calculate ratios of enrollees per full-time provider for commercial insurance, CHI borrowed benchmarks designated by the Colorado Department of Regulatory Agencies’ Division of Insurance (DOI).

Finally, CHI calculated the enrollee-to-provider ratio as well as scores based on the above benchmarks. If there are no providers in an area, then the score is zero. If the ratio of enrollees per provider is less than the aspirational benchmark, then the score is 10. If the ratio is above the aspirational benchmark, then the score is determined by dividing that number by the benchmark (e.g., 1800), subtracting 10, and taking the absolute value.

Note that there was one indicator under Potential Access that was eliminated from the score calculation for each insurance type. The Medicaid index does not include a score for NPs and PAs. The commercial insurance index does not include a score for behavioral health providers.

Although CHI used data on providers accepting Medicaid, CHI did not have information on which

providers participated in which commercial insurance networks. Therefore, counts of providers should be interpreted with caution.

For consistency, CHI used estimates of Coloradans with commercial health insurance with the dental metrics. About 70 percent of Coloradans indicated having dental insurance in 2017.

## Limitations

The index is not adjusted for income, health status, or other socioeconomic factors, which limits CHI's ability to compare access metrics between payers in an apples-to-apples way. In other words, in some instances the difference in access rates may be due more to variations of populations served by each payer than by the characteristics of the coverage. The extent to which each variable (such as income) influenced the final access score cannot be determined.

CHI combined all people with commercial health plans into one group for the purpose of analysis. Unlike Medicaid, there is more variation in the types of commercial health plans. Therefore, access scores

for commercial insurance hide nuances in barriers to care that would be more visible had CHI analyzed these plans separately.

People often experience what is called “churn” in their health coverage — that is, they switch coverage or lose coverage altogether. Churn can impact self-reported metrics like cost. For example, cost barriers to care may be higher for people experiencing churn, since they may have had out-of-pocket medical expenses while in between coverage. To obtain the most accurate data, CHI limited data for self-reported metrics, like the CHAS, to people with coverage for each type of insurance consistently over the past 12 months.

Lastly, CHI intended to use county-level data wherever possible. But for some metrics, data were only available by Health Statistics Region (HSR). For these indicators, HSR values were applied to every county in the region. For a few metrics, like child care and ability to take off work, sample size limitations required combining multiple years of data and/or using only statewide numbers. These instances are noted in the “Indicator List” above and in the interactive online index.