

Community Dashboard: Methodology

Updated February 2021

The Community Dashboard provides communities across Colorado with information on health care cost, utilization, access and quality of care. The data is based on 2013-2019 claims from the Colorado All Payer Claims Database (CO APCD) and represents the majority of Colorado residents with health insurance. The CO APCD includes claims for Medicaid, Medicare Advantage and Fee-for-Service, and commercially insured lives with the exception of most ERISA-based self-insured employer claims. Federal insurance programs such as Veterans Affairs, Indian Health Services and Tricare are also not included. Below are methodological considerations applicable to both the interactive Community Dashboard and to the data files. The data files include additional measures and demographic breakdowns for the measures included on the interactive dashboard. Both the interactive report and the data files are available publicly at www.civhc.org.

Description of Measures

Cost Measures

Cost measures reflect payments made by health insurance payers and insured individuals for medical services and prescriptions filled Per Person Per Year (PPPY), for Colorado residents. The PPPY calculation does NOT include premium information, and only reflects payments made for actual services received or prescriptions filled.

The PPPY measure is calculated by summing all dollars spent on medical and pharmacy services divided by the total number of insured-years. The total dollars spent on medical and pharmacy services are based on insurance claims submitted to the CO APCD by health insurance plans. Insured-years are calculated by summing the months of insurance eligibility for all people with at least one month of eligibility in the reporting period, then dividing the result by 12. The PPPY value is displayed as a dollar amount.

There are two cost breakdowns displayed in the report:

1. Total Cost (Health Plan and Patient) PPPY, which is the sum of Health Plan paid amounts and the Patient portion.
2. Patient Only Cost PPPY, or the amount of dollars paid solely by the patient, also known as “out-of-pocket” cost, which includes copays, coinsurance and deductibles and is also referred to as “member liability”. Note, the CO APCD does not receive information on whether or not a patient actually paid their portion of the payment to their health care provider.

Dollar amounts were calculated in two ways: 1) without any adjustments for population risk (based on factors such as chronic conditions, age, etc.), and 2), with risk-adjustment applied. Both sets of calculations are available in the detailed data files, whereas the interactive dashboard online displays only the risk-adjusted measures. The risk-adjusted amounts are based on the Johns Hopkins Adjusted Clinical Groups (ACG) System, which assigns weights to patients based on diagnoses, disease patterns,

age and gender. By using these weights, the calculated amounts yield more apples to apples comparisons of cost between different populations, within a specific year and payer type.

Neither cost calculation (with or without risk-adjustment) includes any adjustment for inflation over time. **For Medicaid**, costs include supplemental hospital payments that Medicaid pays to hospitals outside of the claims process, but they do not include Long Term Services and Support.

Health Care Use Measures

The Johns Hopkins ACG grouping system¹ developed Resource Use categories to group persons who use similar level of health care resources. This dashboard includes the two categories of the ACG classification that describe the lowest use of health care resources. These two measures are reported as rates per 1,000 insured people. The measure values provided represent the count of people who meet the resource use criteria per 1,000 insured people.

- **Non-Users (lower rates are better)** – count of people with insurance coverage and no incurred CO APCD claims during the year. This count also includes people who do not have enough diagnostic information on their claims to be accurately classified into the appropriate resource use category (ACG Resource Utilization Band level 0). This measure indicates people with insurance who are not using their insurance.
- **Healthy Users (higher rates are better)** – count of people whose diagnostic information contains only data about preventive services and minor conditions during the year (ACG Resource Utilization Band level 1). This measure indicates people who are “healthy”, but are using their health insurance for well-visits, preventive and minor acute care.

Emergency Room Use

Emergency Room Visits represents the count of emergency room visits per 1,000 insured people. This measure was derived using the Johns Hopkins ACG grouping system¹.

- **Emergency Room Visits (lower rates are better)** – events defined as unique patient and date of service combinations that have at least one claim with an emergency room revenue code, procedure code or place of service code, and are not precursors to subsequent inpatient hospital stays in the same period.

Quality of Care

The Institute of Medicine (2001) defines quality as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." Using CO APCD data, CIVHC has produced a number of nationally-endorsed² quality measures used by national and state-sponsored programs.

¹ The Johns Hopkins University Bloomberg School of Public Health (2014). The Johns Hopkins ACG System Technical User Guide, Version 11.0. Retrieved from https://www.healthpartners.com/ucm/groups/public/@hp/@public/documents/documents/cntrb_035024.pdf on October 14, 2016.

² The quality measures used in this report which are endorsed by the National Quality Forum(NQF) are: Breast Cancer Screening [NQF 2372](#); Cervical Cancer Screening [NQF 0032](#); Diabetes HbA1c testing [NQF 0057](#). The logic

Preventive Care: This report includes two preventive measures. Preventive care is an important part of health care quality by helping populations remain healthy. The measures of preventive care include:

- **Breast Cancer Screening:** calculated as the percentage of women 50 to 74 years old who had one or more mammograms to screen for breast cancer during the measurement year and two years prior to the measurement year.
- **Cervical Cancer Screening:** calculated as the percentage of women 21 to 64 years old with one or more screenings for cervical cancer. Appropriate screenings are defined by any one of the following criteria:
 - Cervical cytology (pap test) performed during the previous three years for women who are at least 21 years old at the time of the test;
 - Cervical cytology/human papillomavirus (HPV) co-testing performed during the previous five years who are at least 30 years old at the time of the test.

Appropriate Medical Treatment: The Community Dashboard also includes one measure that indicates if a chronic condition is being managed according to current professional knowledge. Managing chronic conditions appropriately is an important part of health care quality and improving health because it prevents further complications in populations who already have a disease. The measure included in the report is related to diabetes management:

- **Diabetes Hemoglobin A1c (HbA1c) testing:** calculated as the percentage of patients 18 to 75 years old, with diabetes type I or II who received an HbA1c test during the measurement year.

Access to Care

The Community Dashboard also includes two access to care measures, a category of measures that provides information on accessibility to primary or specialty health care encounters. The measures of access to care include:

- **Adult Access to Care:** calculated as the percentage of patients 20 years and older who had an ambulatory or preventive care visit during the measurement year for Coloradans covered by Medicaid and Medicare, or during the measurement year and the two years prior to the measurement year for the commercially insured.
- **Children and Adolescents Access to Care:** calculated as the percentage of patients 12 months to 19 years of age who had at least one visit with a Primary Care Practitioner (PCP) over a slightly different time frame depending on age group, as follows:
 - Children 12 to 24 months and 25 months to 6 years who had a visit with a PCP during the measurement year, and
 - Children 7 to 11 years and adolescents 12 to 19 years who had a visit with a PCP during the measurement year or the year prior to the measurement year.

Demographic Characteristics

The dashboard presents measure values by **geographical location** (by county and Division of Insurance (DOI) Region). Additional demographic breakdowns by age and gender are available separately in the

used to produce these HEDIS® measure results has not been certified by NCQA. Such results are for reference only and are not an indication of measure validity.

downloadable data files. Individuals for whom age or gender information are not available or unknown are excluded from all analyses.

Demographic characteristics reflect the result of an assessment of all available claims at the person level. Age is calculated as of December 31st of the reporting year. The typical age groups used in this report are: 0 to 17 (“Child”), 18 to 34 (“Young Adult”), 35 to 64 (“Mature Adult”), 65 or older (“Senior Adult”). Quality of care and access to care measures have specific age ranges and, in some cases, age subgroup requirements.

Only residents of Colorado are reflected in the data. State resident status is determined based on the most recent insurance eligibility record available in a given year, which indicates whether the person resides in a ZIP code within Colorado. All calculations are based on where Colorado residents live, not where they received care. For example, cost of care for patients living in Eagle county may not correlate directly with cost to receive care in Eagle county if residents in that area travel to other counties to receive care. For specific information regarding prices for services at particular facilities in Colorado, visit our [Shop for Care](#) or [Medicare Reference-based Price](#) webpages.

Geographic Groupings

Geographic breakdowns available in the report are Colorado counties and Division of Insurance (DOI) commercial insurance geographic rate setting areas.³ The following is a list of counties in each DOI region, along with the label displayed for each region in this report:

- Rating Area 1 – Boulder: Boulder
- Rating Area 2 – Colorado Springs: El Paso, Teller
- Rating Area 3 – Denver: Adams, Arapahoe, Broomfield, Clear Creek, Denver, Douglas, Elbert, Gilpin, Jefferson, Park
- Rating Area 4 – Ft. Collins: Larimer
- Rating Area 5 – Grand Junction: Mesa
- Rating Area 6 – Greeley: Weld
- Rating Area 7 – Pueblo: Pueblo
- Rating Area 8 – East: Alamosa, Baca, Bent, Chaffee, Cheyenne, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Logan, Mineral, Morgan, Otero, Phillips, Prowers, Rio Grande, Saguache, Sedgwick, Washington, Yuma
- Rating Area 9 – West: Archuleta, Delta, Dolores, Eagle, Garfield, Grand, Gunnison, Hinsdale, Jackson, La Plata, Lake, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel, Summit

Service Categories

There are four major service categories displayed for cost measures in this report: Inpatient, Outpatient, Professional, and Pharmacy.

- **Inpatient** services refer to health care services received after being admitted to a hospital, skilled nursing facility, or another institution offering inpatient services. Inpatient services include payments for facility services only.

³ <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/co-gra>

- **Outpatient** services are health care services received in a place of service such as an acute care or critical access hospital, without being admitted, home health services, or services received in ambulatory surgery centers, rural health clinics, Federally Qualified Health Centers (FQHCs), or other outpatient facilities. Outpatient services include payments for facility services only.
- **Professional** services are those provided by physician or other health care professional, such as a nurse practitioner, chiropractor, psychiatrist, or oncologist. These services can be provided in conjunction with an inpatient or outpatient visit across a variety of health care facility types, but are displayed separately in the dashboard.
- **Pharmacy** services refer to prescriptions that were filled and paid for through health insurance for generic or brand medications. Please note that pharmacy costs do not include any rebates, discounts, or subsidies that may have been received by either the payer or the patient after fulfillment.

PPPY values for Inpatient, Outpatient, and Professional services are based on insured-years for people with at least one month of *medical* eligibility in the reporting period. PPPY values for Pharmacy services are based on insured-years only for people with at least one month of *prescription drug* eligibility. Overall PPPY values are calculated using insured-years for people with at least one month of either *medical* or *prescription drug* eligibility. **Not all people with insurance coverage are eligible for both medical and pharmacy services and, as a result, the Total PPPY values do not equal the sum of the PPPY values for Inpatient, Outpatient, Professional, and Pharmacy services.**

Payer Types

The payer types available in this report are: Commercial, Medicaid, Medicare Advantage, Medicare Fee-For-Service (Medicare FFS), and a combination of all four types labeled as “All Payers.” The Medicaid population includes people covered with Medicaid managed directly by the State Agency (Department of Health Care Policy and Financing, HPCF), by Accountable Care Collaboratives or Managed Care Organizations. Medicare Advantage claims are provided by commercial insurance payers who offer Medicare Advantage plans.

For report measures other than the quality measures, payer type is created by assigning each person to an *annualized* payer type based on their primary medical insurance information during a reporting year, regardless of whether the person had insurance for just a single month, the full year, or any number of months in-between. The annualized assignment is based on the payer type with the highest number of months with (a) commercial, (b) Medicaid, or (c) Medicare Advantage or Medicare FFS insurance, summed together. In the event of a tie in the number of months with insurance for two or more payer types, a secondary logic step looks at the count of claims within each of those payer types and an assignment is made to the type with the highest claim count. For example, a person with commercial insurance for six months with ten commercial claims and Medicare Advantage insurance for the other six months and with three Medicare Advantage claims will receive the commercial payer type at the annual level. A person with a greater number of Medicare months than Medicaid or commercial, and with the same number of Medicare FFS and Medicare Advantage months and claims, will be assigned to Medicare FFS payer time at the annual level.

Pharmacy and dental insurance eligibility information, or secondary insurance information, is not considered when assigning a payer type. Once a person is assigned a payer type, all medical and

pharmacy claim records for that person are associated with that assignment, regardless of the insurance type information on the claim record.

For quality of care and access to care measures, payer type is defined based on primary insurance information at the person-eligibility-month level with additional measure- and payer-type specific criteria for continuous enrollment during the time frame specific to each measure. Depending on the measure, certain payer types are unavailable, as per measure methodology specifications, and are displayed as asterisks on the dashboard and as blank values in the detailed data files. Those are:

- Cervical Cancer Screening – unavailable for Medicare FFS, Medicare Advantage;
- Children and Adolescents’ Access to Care – unavailable for Medicare FFS, Medicare Advantage.

Medicare FFS claims for medical and pharmacy are submitted on an annual as opposed to a monthly basis for other payers. As a result, Medicare FFS claims are not available for all years displayed in the dashboard. For more information about what’s currently available in the CO APCD (paid through dates), [click here](#).

Comparison to Statewide and Urban/Rural Benchmarks

For each county or DOI region value, the dashboard displays three data points for comparison purposes: measure values at the state level, as well as overall for all urban counties and rural counties. The rural and urban county classification is based on the U.S. Office of Management and Budget county-level designation: counties that are part of a Metropolitan Statistical Area are considered “urban”, and all other counties are considered “rural”.⁴ The following is a list of rural and urban Colorado counties:

- Urban counties (17): Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Elbert, Gilpin, Jefferson, Larimer, Mesa, Park, Pueblo, Teller, and Weld;
- Rural counties (47): Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Eagle, Fremont, Garfield, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, La Plata, Lake, Las Animas, Lincoln, Logan, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Phillips, Pitkin, Prowers, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Washington, Yuma.

Data Suppression

Following privacy protection standards used by the Centers for Medicare & Medicaid Services (CMS), data are suppressed for values based on fewer than 11 units, for example, cost PPPY values based on fewer than 11 insured-years or emergency room rates based on fewer than 11 visits. Throughout the dashboard and the data files, data points impacted by low volume are replaced with an asterisk on the dashboard and left as blank cells in the data files.

Data Limitations

Data presented in this report are the result of a process that strives to ensure high quality, reliable, and accurate information. Potential areas of concern are investigated and addressed accordingly, on a

⁴ Colorado Rural Health Center (2016). *Colorado: County Designations, 2016*. Retrieved from <http://coruralhealth.wpengine.netdna-cdn.com/wp-content/uploads/2016/03/2016.CountyDesignations.pdf> on July 13, 2017.

regular basis, and while every effort is made to address all known areas of concern for this report, some may remain.

Data for small population breakdowns or for rare events should be interpreted with caution, since they are prone to significant fluctuations. Colorado counties with small populations (fewer than 5,000 people overall) at one point during the reporting time frame include: Baca, Cheyenne, Costilla, Custer, Dolores, Gilpin, Hinsdale, Jackson, Kiowa, Lincoln, Mineral, Ouray, Phillips, San Juan, Sedgwick, Saguache, and Washington.

At the time of the analysis, the CO APCD did not have available the 2018 pharmacy claim records for Medicare FFS. This has impacted several measures displayed in this report, in particular the Pharmacy and overall (Inpatient, Outpatient, Professional and Pharmacy combined) cost of care measures:

- 2018 Cost of Care PPPY for Medicare FFS, and
- 2018 Cost of Care PPPY for All Payers.

Similarly, at the time of this analysis, the CO APCD did not have any 2019 medical and pharmacy records for Medicare FFS, which has impacted all measures displayed.

Those impacted data points are displayed as asterisks on the dashboard and as blank values in the detailed data files.

Data Vintage

More information regarding the payers represented in this public report:

- Current CO APCD [Data Submitters List](#)
- [Percent of insured individuals](#) in the CO APCD by Colorado county

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