CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

P1010 Community Dashboard: Methodological Notes

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The Community Dashboard presents information on health care cost, utilization, access and quality of care for Colorado residents with health insurance represented in the Colorado All Payer Claims Database (CO APCD) between 2013 and 2018. Below are methodological considerations applicable to both the interactive dashboard and to the data spreadsheet available separately, which includes additional demographic breakdowns.

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 three cost breakdowns displayed in these reports:

1. Health Plan Only Cost PPPY, or the amount of dollars paid solely by health plans,
2. Patient Only Cost PPPY, or the amount of dollars paid solely by the patient, also known as "out-of-pocket" cost, and
3. Total (Health Plan and Patient) Cost PPPY, the sum of Health Plan Cost and Patient Cost.

Dollar amounts were calculated in two ways: one, without any adjustments for population risk, and the second, with risk adjustment applied. Both sets of calculations are available on the dashboard. The risk adjusted amounts reflect risk-adjustment at the patient-year-payer type level based on a commercial risk-adjustment tool, 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 fairer comparisons between different population breakdowns, within a specific year and payer type. Neither amount calculation (with and without risk adjustment) includes any adjustment for inflation over time.

Costs for Medicaid include supplemental payments made to providers and hospitals outside of the typical claim process.

Utilization Measures

Utilization measures are reported as rates per 1,000 people, and describe the number of people using (or not using) health services out of 1,000 insured individuals. Included in this report are the following measures:

(a) 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 risk category (ACG Resource Utilization Band level 0). This measure indicates people with insurance that are not using their insurance;

(b) 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;

(c) 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.

Measures (a) through (c) were derived with the Johns Hopkins ACG grouping system.[1]

Access and Quality Measures

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-endorsed[2] quality measures used by national and state-sponsored programs.

Preventive Measures: This report includes two preventive measures. Preventive care is an important part of health care quality by helping populations to remain healthy. The measures of preventive care included in this report are:

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;

[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 Qualify Forum(NQF) are: Breast Cancer Screening NQF 2372; Cervical Cancer Screening NQF 0032; Diabetes HbA1c testing NQF 0057.

- 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.

Quality of Care for Conditions: This report also includes one measure that indicates if a condition is being managed according to current professional knowledge. Managing chronic conditions appropriately is an important part of health care quality because it prevents further complications in populations who already have a disease. The measure included in this report is Diabetes Hemoglobin A1c testing.

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: This report includes two access to care measures, a category of measures that provides information on the accessibility to periodical primary or specialty health care encounters. The measures of access to care included in this report are:

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 Medicaid and Medicare insureds, 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** (i.e., by county and DOI Region). Additional demographic breakdowns by age and gender are available separately in spreadsheet format. 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 records, 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 measures have specific age range requirements as described above and detailed age subgroups are not calculated.

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 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, visit our Shop for Care or Medicare Reference-based Price webpages.

Geographic Groupings

Geographic breakdowns available in the report are Colorado counties and Department of Insurance (DOI) Regions. DOI Regions are county groupings that represent the Colorado Market Geographic Rating 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.
- **Outpatient** services are health care services received in a place such as a hospital or clinic without being admitted.
- **Professional** services are services delivered by a physician or other health care professional, such as a nurse practitioner, chiropractor, psychiatrist, or oncologist, and can be received as either an inpatient or outpatient in a variety of health care facility types.
- **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

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

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."

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 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 measure, certain payer types are unavailable, as per measure methodology specifications, and are displayed as blank cells on the dashboard and the detailed data spreadsheet. Those are:

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

Medicare Fee-for-Service 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 for all 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"; 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 underlying detailed data in spreadsheet format, data points impacted by low volume are displayed as blank cells.

Data Limitations

Data presented in this report are the result of a process that strives to ensure the high quality, reliability, and accuracy of the final product. Potential areas of concern are investigated and addressed accordingly, on a 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 that typically have had 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 cost of care measures:

- 2018 Cost of Care PPPY for Medicare FFS for Pharmacy Cost and Overall Cost;
- 2018 Cost of Care PPPY for All Payers for Pharmacy Cost and Overall Cost.

Those data points are displayed as blank values on the dashboard and the detailed data spreadsheet.

Data Vintage

Information regarding the payers represented in this public report:

- Current CO APCD Data Submitters List
- Percent of insured individuals in the CO APCD by county

[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.

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