Reference-Based Inpatient and Outpatient Payment Analysis:

Reducing Payment Variation as a Potential Cost-Savings Mechanism

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CIVHC
CENTER FOR IMPROVING
VALUE IN HEALTH CARE

Overview

Many cost reduction strategies have been implemented and tested to address rising health care costs locally and nationally. One model in particular – reference-based pricing – has proven to be an effective approach for reducing health care spending.

In partnership with the Colorado Business Group on Health (CBGH), and with funding from the Colorado Department of Health Care Policy and Financing (HCPF), the Center for Improving Value in Health Care (CIVHC) analyzed paid amounts in the Colorado All Payer Claims Database (CO APCD) to determine the potential impact reference-based pricing (both percent of Medicare and median commercial payments) could have statewide on high volume, high price inpatient and outpatient services.

Results show that if variation in prices for the top 12 inpatient services and top 10 outpatient services were normalized to one of three reference-based pricing scenarios, health care spending could be reduced by $49-$178 million annually across commercial health insurance payments. Additional reductions in spending, referred to in this report as savings, would be possible if a reference-based pricing model was applied across all inpatient and outpatient services in the state.

Background

Commercial health insurance payers often negotiate rates with providers based on expected discounts on the amounts charged for services. These charges, however, are determined independently by each provider or facility, making it difficult for a self-insured employer or health plan to determine if they are receiving a reasonable rate. For example, one health care facility may charge $100,000 for brain surgery while another charges $50,000 for the same procedure. A payer negotiating a 20% discount off of charges with each facility would get the same discount or "deal" but would still be paying a lot more at the facility that charges the higher initial rate.

In contrast, the Centers for Medicare & Medicaid Services (CMS) determines reasonable payments to hospitals and providers through **MedPAC**, an independent advisory group that takes into consideration a variety of factors including patient mix and geographic location when setting payments. MedPAC establishes new rates annually with the goal to cover costs for efficient hospitals and providers. While MedPAC does propose rates to Congress that are intended to cover costs for hospitals, those payments are not always approved as suggested, and the top 15 percent most efficient and high-value hospitals in the country report a one percent loss on Medicare payments.

To accommodate the need for providers to make a profit in order to continue to provide care to patients with public insurance, this analysis assumes payments of 1.5-2 times Medicare payments and the median statewide commercial paid amounts as potential reference points. It is important to note that the three scenarios provided in this analysis are intended for demonstration purposes only, and other reference-based negotiation options should be explored between payers and providers seeking to implement a similar model.

Analysis and Methodology

To understand how payments vary across Colorado facilities as a percentage of Medicare payments, CIVHC used CO APCD claims from 2012 to 2016 submitted by 33 commercial health insurance payers to investigate paid amounts for the top ten outpatient services and top 12 inpatient services by volume and spend. Median paid amounts in this analysis represent the median value of the total amounts paid to providers by commercial health insurance companies and patients (through copays, coinsurance and deductibles).

The services in this analysis represent approximately 20 percent of inpatient total spend and 30 percent of outpatient total commercial insurance spend in the CO APCD for those lines of service. Additional years, more detail by specific service, de-identified facility and payer comparisons, and regional variation information are available through our online interactive reference-based report at [www.civhc.org.](http://www.civhc.org)

Inpatient Services Analyzed

Services with a hospital fee, requiring an overnight stay

- Bronchitis & Asthma, DRG 203
- Cesarean Section, DRG 766
- Cesarean Section, w/Complicating Conditions, DRG 765
- Esophagitis, Gastroenteritis, and Digestive Disorders, DRG 392
- Heart Failure & Shock, DRG 293
- Heart Failure & Shock, w/Complicating Conditions, DRG 292
- Major Joint Replace./Reattach., Lower Extremity, DRG 470
- Newborn, DRG 795
- Spinal Fusion, Non-Cervical, DRG 460
- Stroke (Transient Ischemia Attack), DRG 069
- Vaginal Delivery, DRG 775
- Vaginal Delivery w/Complicating Conditions, DRG 774

Outpatient Services Analyzed

Services with a facility fee, not requiring an overnight stay

- Cataract Surgery w/Lens, CPT 66984
- Chemo Infusion (1 hr), CPT 96413
- Colonoscopy w/Biopsy, CPT 45380
- Colonoscopy w/Lesion Removal, CPT 45385
- Dialysis Evaluation, CPT 90945
- Knee Arthroscopy/Surgery, CPT 29881
- Major Joint, Bursa Drain, Injection, CPT 20610
- Ultrasound Therapy, CPT 97035
- Upper GI Endoscopy w/Biopsy, Single/Multiple, CPT 43239
- Laparoscopy Appendectomy, CPT 44970

For Medicare payment comparisons, CIVHC used published comparable Medicare fee schedule information for Colorado for outpatient services and compared inpatient payments to median paid amounts from Medicare Fee-for-Service inpatient claims collected in the CO APCD. Percent Medicare rates reflect the percentage commercial payments differ from Medicare, with 100% being equal to Medicare payments.

In addition to Medicare benchmarks, median statewide commercial payments were also used as another potential reference point to minimize payment variation and potentially save costs.

Specifically, this analysis evaluated three reference-based scenarios:

1. Normalizing all payments to 150% Medicare fee schedule (1.5 times the Medicare rate),
2. Normalizing all payments to 200% Medicare fee schedule (double the Medicare rate), and
3. Bringing all payments above the statewide commercial median payments to the statewide median.

The Colorado Division of Insurance (DOI) geographical rate setting areas, used to assign commercial health insurance premiums, were used as a method to evaluate regional variation in prices.

Statewide Variation & Cost Savings Potential

Statewide Variation

On average, in Colorado, commercial payers are paying 290 percent, or nearly three times Medicare rates for inpatient services analyzed, and 540 percent, or nearly 5.5 times Medicare rates for outpatient services. From 2012 to 2016, payments increased 40 and 80 percentage points for inpatient and outpatient services respectively, compared to Medicare payments which were adjusted annually to accommodate Consumer Price Index changes. Across the ten individual outpatient services analyzed, variation in payments ranged from 250 percent to as much as 1,150 percent, or 11.5 times the Medicare rate for some procedures.

Statewide Results: Percent of Medicare Fee Schedule Comparison/Trend
Commercial Payers, 2012 & 2016, CO APCD

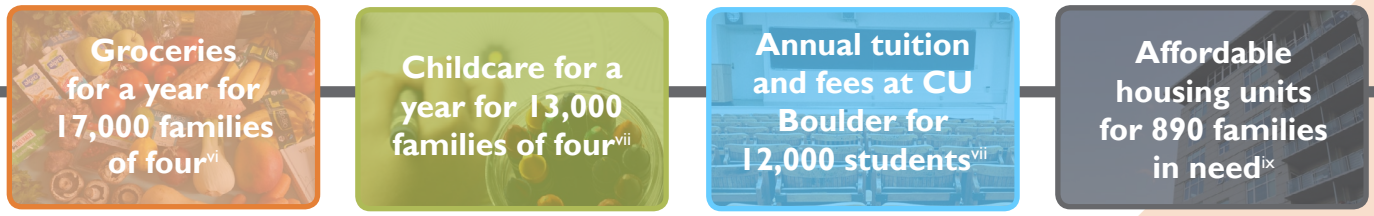
	2012 Average % Medicare*	2016 Average % Medicare*	Percentage Point Increase 2012-2016
Inpatient Services (top 12 by volume/price)	250% (range 210%-300%**)	290% (range 260%-330%**)	↑ 40
Outpatient Services (top 10 by volume/price)	440% (range 210%-1,160%**)	520% (range 250%-1,150%**)	↑ 80

* Average % Medicare reflects the average percent of Medicare across all services analyzed in each category.
** Range reflects lowest average % Medicare rate and highest average % Medicare rate across the individual services analyzed.

Statewide Cost Savings Opportunities

Using the three potential cost savings scenarios (normalizing payments to 150% and 200% Medicare and the commercial statewide median), Colorado could potentially save $49-$178 million annually on just the 22 services analyzed.

Perspective on Cost Savings: **$178 million could pay for**:



Statewide Results: Inpatient & Outpatient Annual Potential Savings Scenarios
Commercial Payers, 2016, CO APCD

	Total Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)
Inpatient Services (top 12 by volume/price)	$284 million	$36 million	$86 million	$136 million
Outpatient Services (top 10 by volume/price)	$59 million	$13 million	$36 million	$42 million
Total (IP/OP) (rounded to nearest mil.)	$343 million	$49 million	$122 million	$178 million

* Median price potential savings reflects potential annual statewide savings if all IP/OP payments analyzed that were above the statewide median were paid at the statewide median price. Assumes prices below the statewide median remain the same.
** 150% and 200% Medicare Potential Savings reflects potential annual statewide savings if all IP/OP payments analyzed were normalized to either 150% or 200% Medicare payments.

Regional Variation & Cost Savings Potential

Regional Variation & Trends

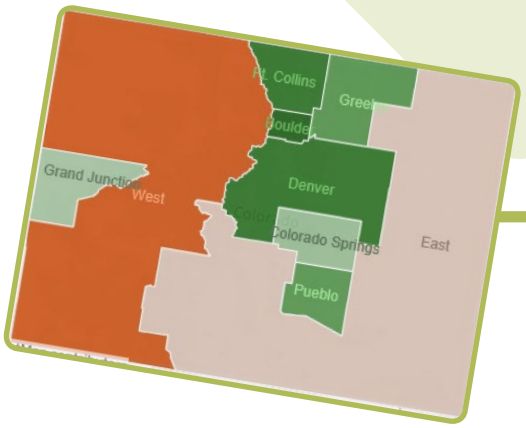
Wide variation in prices and percentage of Medicare exists at the statewide level as well as geographically across the Division of Insurance (DOI) regions in the state. This analysis, similar to others conducted with CO APCD data, shows that regional price variation cannot be explained solely based on geography as it varies depending on services being provided. For example, the Pueblo region has some of the lowest costs for inpatient services (7th lowest out of 9 regions), yet they have the 3rd highest costs for outpatient services.

In general, there is a 1.6 times difference between the lowest (Boulder) and highest region (West) for inpatient services, and a 2.1 times difference between the lowest (Colorado Springs) and highest outpatient region (East).

Regional Inpatient Results: Price Comparison, High to Low as % Medicare
Commercial Payers, 2016, CO APCD

Division of Insurance Region	Median Inpatient Price (% of Medicare)
West	386%
East	374%
Ft. Collins	354%
Grand Junction	347%
Greeley	326%
Denver	280%
Pueblo	278%
Colorado Springs	251%
Boulder	242%

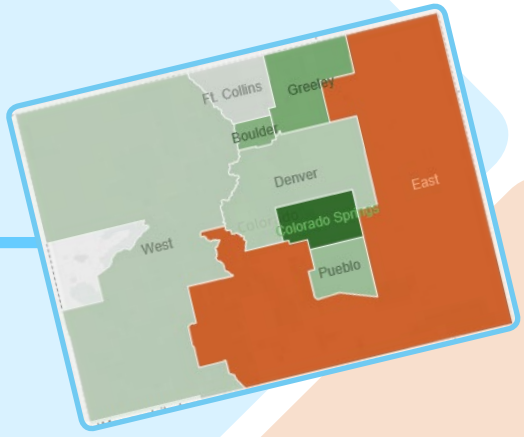
1.6 x Difference



Regional Outpatient Results: Price Comparison, High to Low as % Medicare
Commercial Payers, 2016, CO APCD

Division of Insurance Region	Median Outpatient Price (% of Medicare)
East	694%
West	648%
Pueblo	564%
Denver	563%
Greeley	534%
Boulder	495%
Ft. Collins	453%
Grand Junction	410%
Colorado Springs	324%

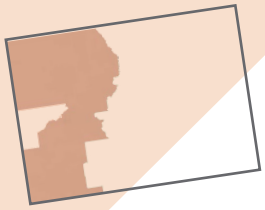
2.1 x Difference



At the procedure level, the median paid amount and percent of Medicare also varies by region depending on the type of service being utilized. **To explore regional variation between regions at the procedural/individual service level, please visit the interactive version of the detailed reference-based price report at www.civhc.org.**

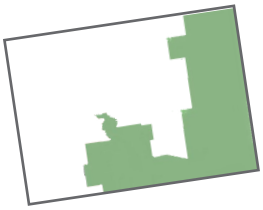
Regional Cost Savings Opportunities

On a regional basis, many areas across Colorado could see significant savings if variation was reduced. The West, highest for inpatient services, could save $9-$16 million annually for the top 12 inpatient services. Similarly, the East, highest for outpatient services, could save as much as $1.9 million annually on the ten outpatient services.



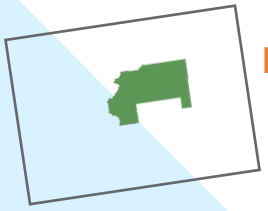
Regional Cost Savings Analysis, Inpatient
West DOI Region, Commercial Payers, 2016, CO APCD

	Total West DOI Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)
Inpatient Services (top 12 by volume/price)	$26.7 million	$8.9 million	$12.8 million	$16.3 million



Regional Cost Savings Analysis, Outpatient
East DOI Region, Commercial Payers, 2016, CO APCD

	Total East DOI Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)
Outpatient Services (top 10 by volume/price)	$2.4 million	$990k	$1.7 million	$1.9 million



Regional Cost Savings Analysis, Inpatient/Outpatient
Denver DOI Region, Commercial Payers, 2016, CO APCD

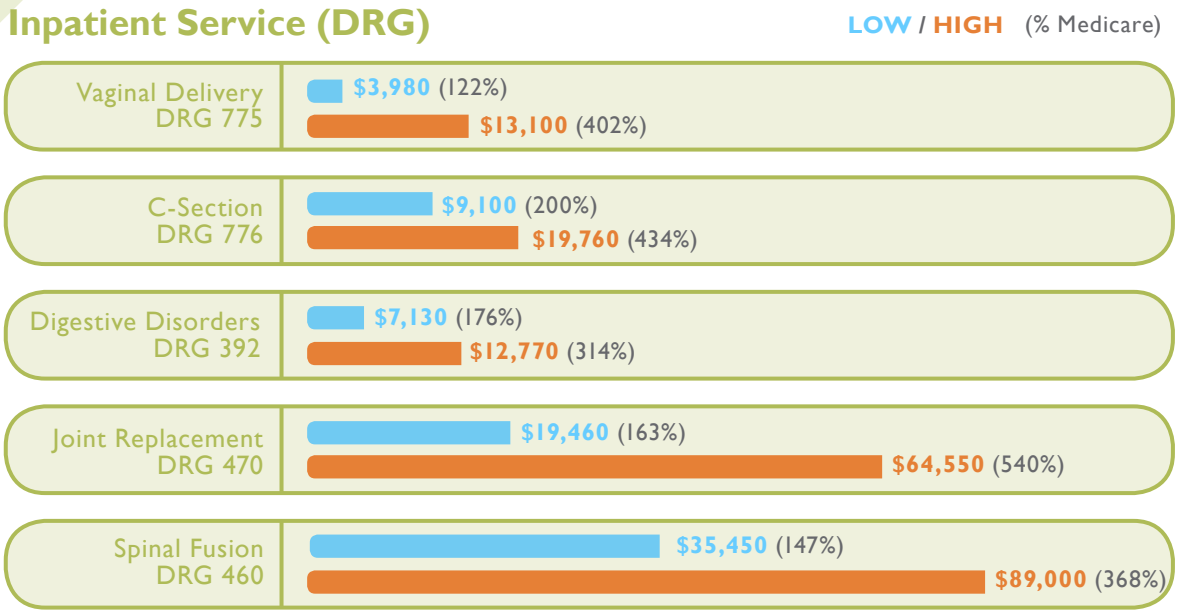
	Total Denver DOI Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)
Inpatient Services (top 12 by volume/price)	$156 million	$16 million	$45 million	$72 million
Outpatient Services (top 10 by volume/price)	$29 million	$8 million	$18 million	$21 million
Total (IP/OP) (rounded to nearest mil.)	$185 million	$24 million	$63 million	$93 million

* Median price potential savings reflects potential annual statewide savings if all IP/OP payments analyzed that were above the statewide median were paid at the statewide median price. Assumes prices below the statewide median remain the same.
** 150% and 200% Medicare Potential Savings reflects potential annual statewide savings if all IP/OP payments analyzed were normalized to either 150% or 200% Medicare payments.

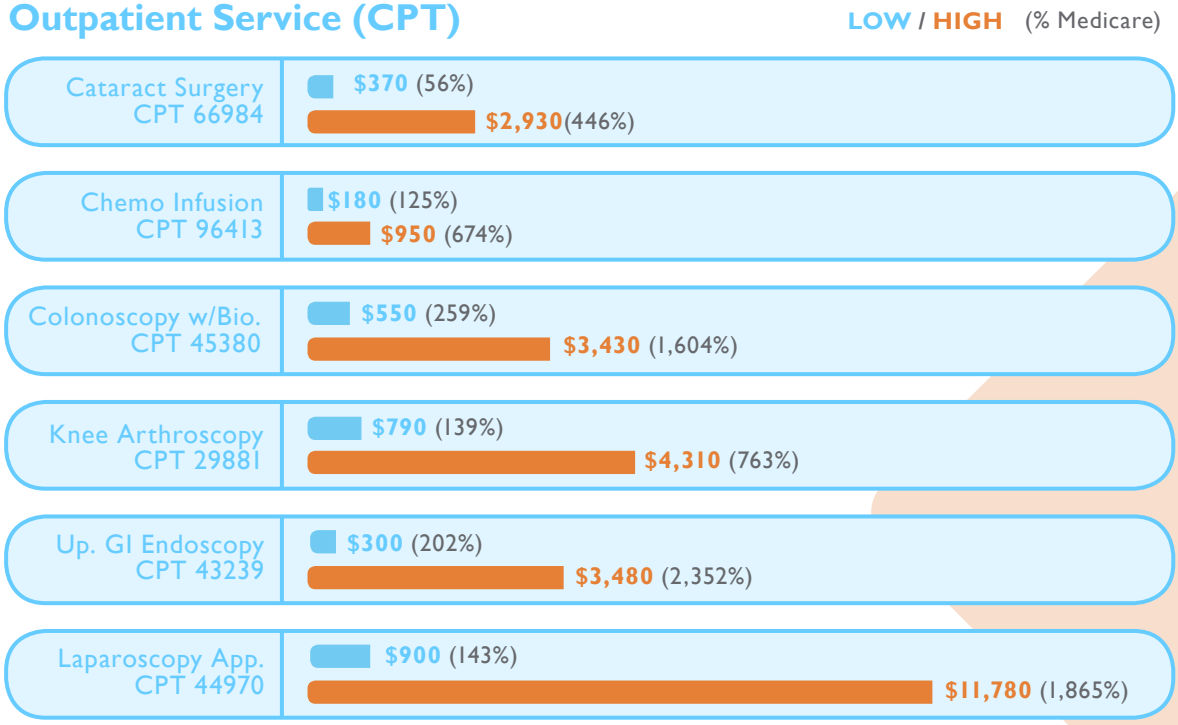
Facility Variation & Trends

Payments and percentage of Medicare vary greatly, not only by region of the state, but also across facilities. For example, for a major joint replacement of lower extremity without complications, hospital-specific payments varied from $19,000 on the low end to $57,000 on the high end. The tables below identify facility commercial payer variation for several of the inpatient and outpatient procedures. To see variation across all services, visit our interactive report online at www.civhc.org.

Inpatient Variation in Facility Median Paid Amount & Percent of Medicare
2017, CO APCD



Outpatient Variation in Facility Median Paid Amount & Percent Medicare
2017, CO APCD



Colorado Employer Cost Savings Study

Large employers who fund their own employee health insurance program can utilize this type of analysis and the CO APCD to evaluate potential cost-savings approaches. As an example, CIVHC took claims data from a large statewide employer with approximately 12,000 self-insured members and analyzed their payments for the inpatient claims against the same three cost-savings scenarios. Data in the table below shows that this employer could save between $530,000 and $3.3 million if they were able to negotiate rates similar to median statewide commercial prices or up to 200% of Medicare for the 12 inpatient services. Savings could be much higher if all outpatient and inpatient services were negotiated using a reference-based pricing model.

Inpatient Annual Potential Employer Savings Scenarios
Commercial Payers, 2016, CO APCD

	Total Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)	100% Medicare (potential savings**)
Inpatient Services (top 12 by volume/price)	**$5.1 million**	**$530k**	**$1.5 million**	**$2.4 million**	**$3.3 million**

* Median price potential savings reflects potential annual savings for a Colorado employer if all inpatient payments analyzed that were above the statewide median were paid at the statewide median price. Assumes prices below statewide median remain the same.
** 100%, 150% and 200% Medicare Potential Savings reflects potential annual savings for a Colorado employer if all outpatient payments analyzed were normalized to either 100%, 150% or 200% Medicare payments.

Montana Case Study

Faced with looming projections of a $9 million deficit for their state employee health plan in 2017, the Montana State Employee Plan used Medicare rates as a baseline to negotiate prices with hospitals.[i] They worked with the vast majority of hospitals in the state, many of which are Critical Access Hospitals, to pay 234 percent of Medicare payments for all inpatient and outpatient services.[ii] Using Medicare as a reference-base as opposed to traditional negotiations based on charges, the state saved $15.6 million in the first year and now has over $100 million in reserves.[iii] These savings have helped secure the future of health insurance for state employees in Montana and allowed the State Department to use some of the surplus to support other pressing statewide needs.[iv] Based on the results of Montana's reference-based pricing results, North Carolina has plans to implement a similar structure for their state employee plan in January 2020.[v]

The Way Forward

This analysis used median commercial prices and Medicare rates as potential benchmarks to measure price variation. However, other options exist and could be considered to reduce variation in payments for health care services. Other considerations such as a provider's geographic location and patient mix, among other factors, would need to be examined when evaluating the impact of implementing cost savings mechanisms at the individual facility level. This information can, however, be used as a starting point to stimulate further conversations among employers, legislators, providers and other stakeholders on potential ways Colorado could consider addressing rising costs and improving the health and quality of care for all Coloradans.

The Colorado Business Group on Health (CBGH) has been actively convening state officials, employers, hospitals, payers and other stakeholders to introduce the concept of using this type of data from the CO APCD as a starting point to address rising health care costs as well as the burden on employers and all Coloradans. They plan to continue engaging employers to work with payers, hospitals, and other facilities to change the way health care is purchased in the state with the intent of creating a more functional marketplace that works for all players. To find out more or to engage in the work of CBGH and others across the state, please contact CBGH directly at **www.cbghealth.org**, or contact CIVHC at **info@civhc.org** to find out how you can be a part of the conversation.

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Sources

[i, ii] Appleby, J. (2018, June 20). 'Holy Cow' Moment Changes How Montana's State Health Plan Does Business. Kaiser Health News. Retrieved August 2018, from https://khn.org/news/holy-cow-moment-changes-how-montanas-state-health-plan-does-business/?utm_campaign=KHN%3A%20First%20Edition&utm_source=hs_email&utm_medium=email&utm_content=63899645&_hsenc=p2ANqtz--XqDFBzZeQW4sOiEy0x5mD9Eta296DchNyWTflPPr8OW6aWsZqAii

[iii, iv] Bartlett, M. (June 2018). State of MT - RBP Initiative Presentation for The Colorado Business Group on Health. Colorado Business Group on Health Determining Price Reasonableness.

[v] The Pilot. (2018, October 4). State Health Plan Launches New Provider Reimbursement Effort. ThePilot.com. Retrieved October 2018, from http://www.thepilot.com/business/state-health-plan-launches-new-provider-reimbursement-effort/article_1a31dbf6-c7f3-11e8-bb85-6bdba81c9f16.html

[vi, vii, ix] Massachusetts Institute of Technology. (2018). Living Wage Calculation for Denver County, Colorado. Retrieved August 2018, from The Living Wage Calculator: http://livingwage.mit.edu/counties/08031

[viii] University of Colorado. (2018). Cost Estimates - Undergraduate Colorado Resident. Retrieved from University of Colorado Boulder Bursar's Office: https://www.colorado.edu/bursar/cost-estimates/undergraduate-colorado-resident