The Colorado All Payer Claims Database: Support the $2.62 Million State Budget Request

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

The Colorado All Payer Claims Database (CO APCD)

- The CO APCD is the largest, most comprehensive, and only legislatively mandated claims database in the state. It provides **transparency within the health care system**, and helps the state identify ways to **lower costs, improve care, and advance the health** of Coloradans.
- **A fully funded, transparent CO APCD** will help inform state-wide cost control and quality initiatives.
- The Center for Improving Value in Health Care **(CIVHC) administers the CO APCD by appointment** from the CO Department of Health Care Policy and Financing (HCPF).

Costs to Administer the CO APCD

- Local philanthropic foundations funded initial development and expansion of the CO APCD. As of 2018, funding priorities for local foundations have shifted and there is **no ongoing operating philanthropic support** for this statewide resource.
- **CIVHC has taken many steps to reduce overall operating costs** including reducing personnel, changing data vendors to reduce pending cost increases, and trying to leverage subscription partnerships and other strategic relationships.
- Overall CO APCD budget is $5.4 million per year, **$4.5 million of which represents costs to operate core functions** of data intake, management, governance and public reporting **required by the CO ACPD enacting legislation**.
- **The remaining $1.1 million in operating costs directly supports custom analysis** and is covered by earned revenue, local, statewide and national grants, and subscriptions to data and reports.

State Budget Request to Cover Operating Costs

- HCPF is **requesting $2.62 Million** in FY 2019-20 and $2.75 in FY 2020-21 to fully fund the CO APCD, allowing it to continue providing data and analytics to a wide range of state and health care focused Colorado stakeholders.

	FY 2019-20	FY 2020-21
Total Requested Funding	**$2,619,731**	**2,755,153**
General Fund	$2,811,464	$2,946,886
Federal Fund	($191,733)	($191,733)
Total Funding Needed	**$4,669,731**	**$4,805,153**
General Fund	$3,836,464	$3,971,886
Federal Fund	$833,267	$833,267
Funding Previously Appropriated	**$2,050,000.00**	**$2,050,000.00**
General Fund	$1,025,000.00	$1,025,000.00
Federal Fund	$1,025,000.00	$1,025,000.00

The Colorado All Payer Claims Database: Support the $2.62 Million State Budget Request

- CIVHC generates earned revenue through data licensing fees in alignment with national market rates to support costs related to providing custom releases and to cover some infrastructure costs, Frequently, however, many non-profits, state agencies, or researchers are unable to afford the market rate for data.

What Will the $2.62 Million Funding Enable?

- **The funding will allow CIVHC to** focus efforts on enhancing the quality and accessibility of the data, enabling enhanced public reporting, additional data support for state agencies, and identified key projects. More specifically, it will:
  - Broaden access to the CO APCD data to all stakeholders, including consumers,
  - Reduce the cost of accessing non-public data generated from the CO APCD, and
  - Assist efforts moving the State closer to achieving better care, improving quality, and reducing health care costs.
  - Building standardized quality and cost reports and data sets for different stakeholder groups, including state agencies, hospitals, physician groups and employers. Examples include:
    - Actionable reports focused on cost drivers for employers
    - Enhancing quality improvement measures, reports and data sets for health care providers
    - Identification of low value, high cost tests and services for all stakeholders

What Happens Without Additional Funding?

- **Without this additional general operational funding, CIVHC may have to drastically reduce services offered to the state and stakeholders,** removing a critical resource for improving health and reducing costs from the state of Colorado. Data contained in the database would be destroyed according to the statute.

CO APCD Facts & Figures

- The CO APCD is **nationally recognized as a leading APCD** for the breadth of public and custom reporting being produced and utilized to implement positive change.
- The CO APCD contains nearly **800 million health care claims** for Coloradans, representing approximately **77% of insured Colorado**.
- Data is submitted monthly from **39 commercial health insurers, self-insured employers, Medicaid, and Medicare** (quarterly submission)**.**
- CIVHC contracts with vendors for data intake, terabytes of data storage, and processing of claims according to local, state, and federal privacy and security laws, making **CO APCD data credible, actionable, and strongly protected.**
- All releases of CO APCD data, public and custom, must support **improving health, improving care, or reducing costs of health care** in Colorado.

List of 2019 Public Reports

February: Facility Price/Quality Report Expansion

- Updated current information, plus additional X-Ray procedures
- PROMETHEUS episode costs and introduction to episodes of care – January with release (infographic)

March: Opioid spot analysis

April: Condition Prevalence Interactive Pop Health updates; Updated Insights

May: Quality Interactive Pop Health updates; Updated Insights

June: Cost Interactive Pop Health updates; Updated Insights

July: Utilization Interactive Pop Health updates; Updated Insights

August: Prep for fall releases

September: Pharmacy dashboard

October: Total Cost of Care trend information (2014-17) and inclusion of Medicaid; public interactive report if possible

November: Facility Price updated with 2018; Add % facility fee; consider new Prometheus

December: Annual Report – Potential data inclusions: overlay population health data together; cost/utilization/quality/chronic conditions by counties/DOI, etc.; Waste Calculator; pharmacy info as contingency; statewide and national projects that are coming to conclusion (SIM, TCPi, etc)

Notes:

Data Byte potentials (others as requests are made):

- Urgent care vs. office vs. ER variation in price comparisons;
- Mental health utilization (visiting primary care for depression, etc.)
- TCPi
- Results of PCORI survey

Identifiable Entity Public Reporting Suppression Policy

Background:

As administrator of the Colorado All Payer Claims Database (CO APCD), the Center for Improving Value in Health Care (CIVHC) is required to make information publicly available on cost, quality of care and other metrics. This enables consumers, providers, employers, policy makers, health plans and other stakeholders to make informed decisions related to purchasing health care and improving the health care system. To that end, CIVHC makes data available publicly on the website www.civhc.org in two ways: masked (not identifiable) and on a named entity (identifiable) basis.

Preview Period:

Prior to releasing identifiable cost and quality information, CIVHC provides entities that will have data available publicly with a 30-day preview period. During this preview period, entities are able to review the data that will be reflected in the public reports and are provided with information regarding the data methodology and plans for reporting. During the preview period, CIVHC staff is available to answer questions and meet with entities to ensure the data that will be available publicly accurately reflects their information for the reporting period.

Suppression Policy:

If a discrepancy arises with one or more metrics being released during the preview period, CIVHC can provide additional claims level detail to entities upon request. In general, if an entity can demonstrate that their data was significantly different during the reporting period, compared to the data CIVHC has for the same period, CIVHC will consider suppressing the information in question from the public version of the report. Specifically, CIVHC will suppress publicly reporting individual metrics if an entity can demonstrate that their data was at least two standard deviations away from the CO APCD calculated mean for a procedure(s) during the same time period.

Not Automatically Considered for Suppression:

- **Lack of Resources to Validate During Preview Period.** In some instances, entities have not had the resources or staff to review the data during the preview period. In this case, data as represented in the CO APCD reports during the preview period will be released according to planned timeline. Suppression would not be considered unless the entity could demonstrate a data discrepancy as identified above.
- **Discrepancy Between Current and Reporting Period Information due to Change of Ownership, etc.** Due to the nature of claims data and processing time, data on the CIVHC website will always reflect historical information. As a result, an entity would have to demonstrate a data discrepancy *during the reporting period* in order to meet suppression criteria. Therefore, a change of ownership or more current data/new pricing would not meet the criteria to suppress unless the entity could demonstrate a data discrepancy for the actual reporting period being reflected.
- **Miscellaneous.** CIVHC recognizes that it's impossible to foresee all situations for which data suppression requests may occur. If unique situations arise that fall outside of the typical requests this policy addresses above, CIVHC will investigate the situation, be thoughtful about its approach, and work towards a fair and equitable solution for all parties involved which includes taking the consumer perspective into consideration.

Prescribing Opioids in Colorado

Oxycodone, Percocet, and Vicodin

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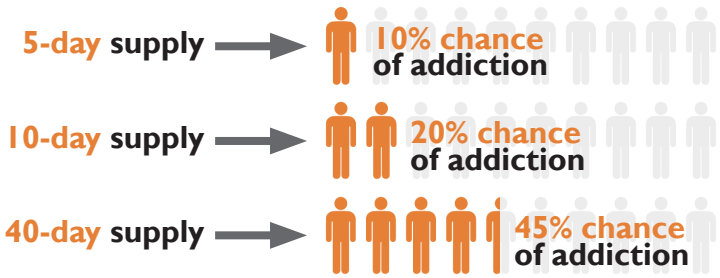
Opioid use disorders impact us all, not only patients. Working from within the health care system and across communities, together we can make a positive impact.

One critical approach to minimizing opioid use disorders is reducing the number of pills given to people with temporary, acute pain. Centers for Disease Control (CDC) research shows that people receiving a five-day supply of opioids the first time they are prescribed have a 10 percent chance of becoming addicted and using opioids long term (one year or more). The likelihood of using an opioid for over a year doubles to 20 percent for people receiving a 10-day supply and jumps up to 45 percent for patients receiving an initial 40-day supply.[i]



To help reduce long-term use and dependency when treating acute pain, the CDC suggests that providers offer alternative treatment options to opioids, and when necessary, prescribe the lowest effective dose for the shortest duration, typically three to seven days.[ii]

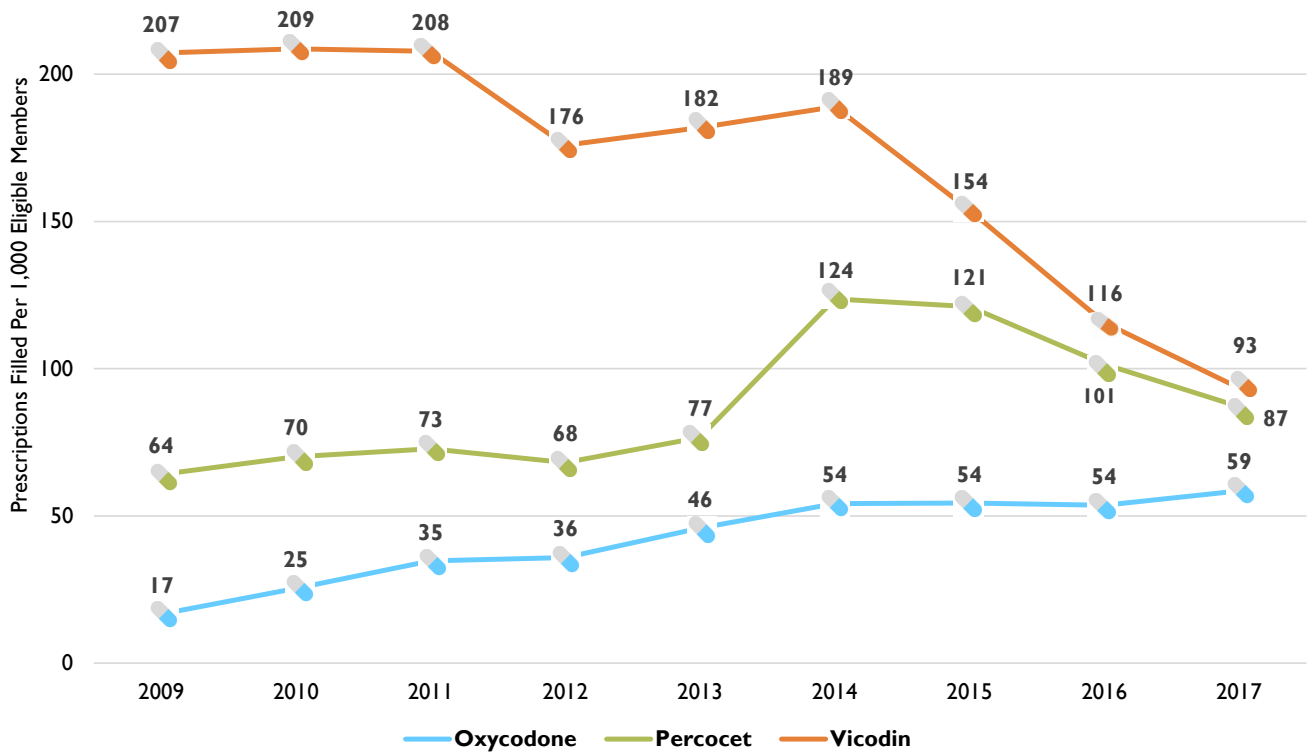
Opioid Prescribing Patterns in Colorado

To understand patterns in opioid days supply being prescribed and filled in Colorado, the Center for Improving Value in Health Care (CIVHC) used data from the Colorado All Payer Claims Database (CO APCD) to evaluate trends for short-acting versions of three commonly prescribed opioids: Oxycodone, Percocet, and Vicodin.

According to CO APCD data, between 2009 and 2017, Coloradans with Commercial, Medicaid and Medicare Advantage health insurance filled nearly 7 million prescriptions for the short-acting versions of Oxycodone, Vicodin and Percocet.

Oxycodone, Percocet, and Vicodin Prescription Trends in Colorado, 2009-2017

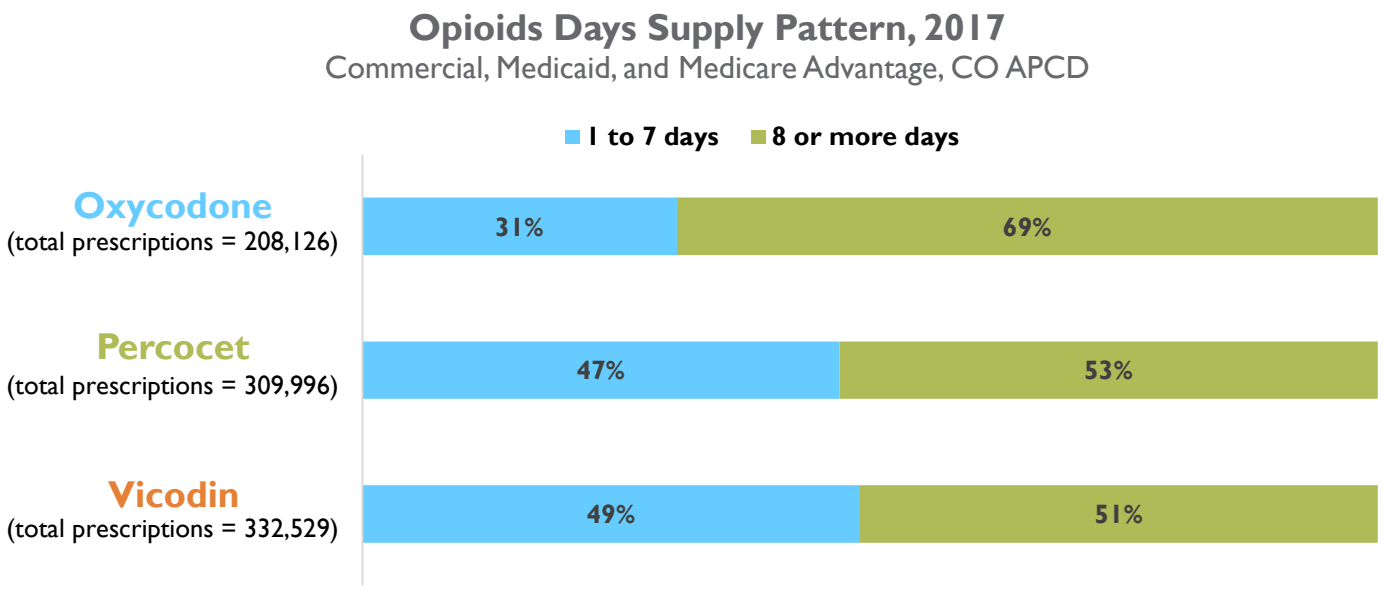
Commercial, Medicaid, and Medicare Advantage, CO APCD

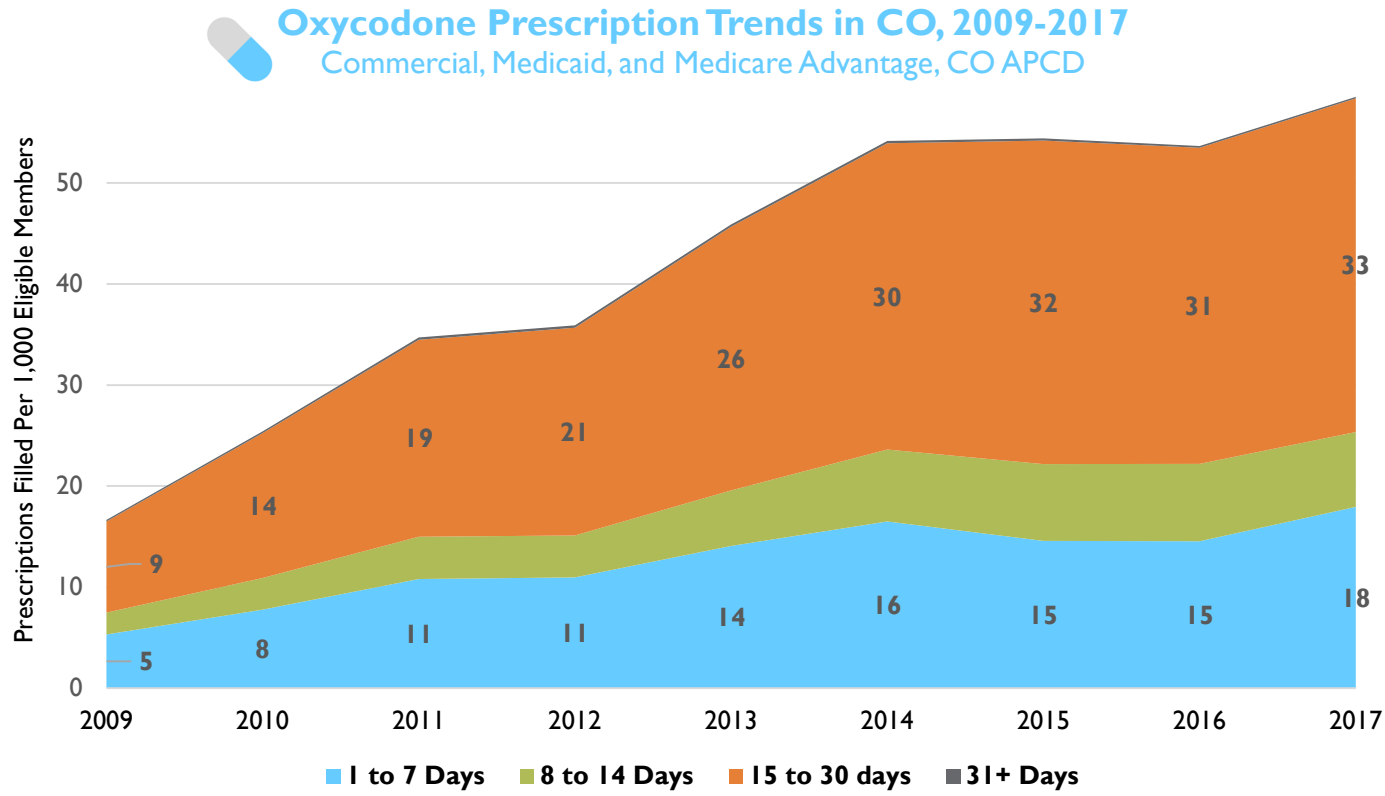


Evaluation of prescribing trends since 2009 indicate that:

- Although it is the least prescribed of the three opioids, rates of Oxycodone prescriptions increased 247 percent between 2009 and 2017.
- Rates of Percocet and Vicodin fills have steadily declined since reaching a peak in 2014 (30 percent and 51 percent reduction respectively).
- Vicodin prescription fills fell sharply in 2015, likely a result of the Drug Enforcement Administration (DEA) changing the Vicodin drug schedule from a Schedule III to a Schedule II (higher potential for abuse and considered dangerous[iii]) in 2014. This change may also explain the increase in Percocet and Oxycodone fills beginning in 2014 as an alternative to Vicodin.

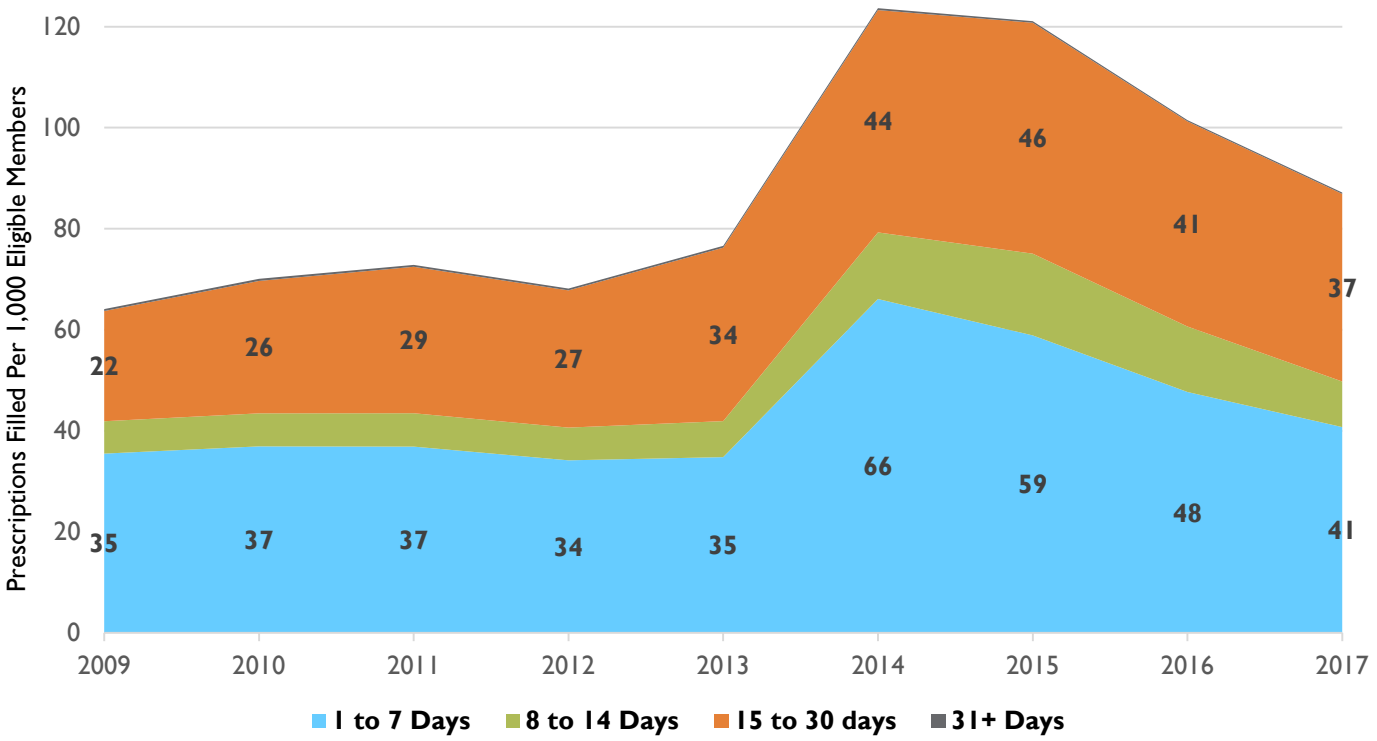
Although the opioid fill rate has fallen for two of the three opioids analyzed, for all three drugs across all payers, more than half of all prescriptions filled were for eight days or more. Oxycodone in particular has higher rates of 15-30 days supply compared to 1-7 days or 8-14 days, and 69 percent of all fills for Oxycodone were for eight or more days.





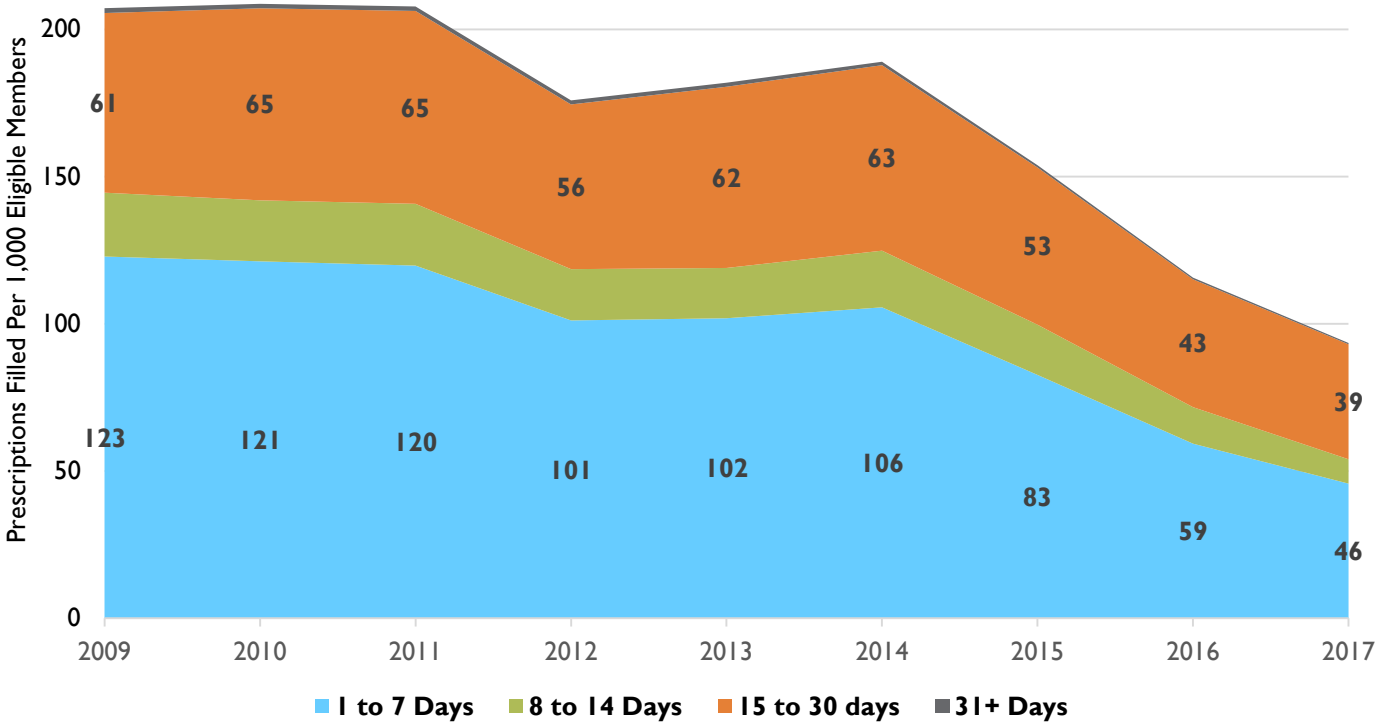
Percocet Prescription Trends in CO, 2009-2017

Commercial, Medicaid, and Medicare Advantage, CO APCD



Vicodin Prescription Trends in CO, 2009-2017

Commercial, Medicaid, and Medicare Advantage, CO APCD



Opportunities

According to this analysis, in general, Colorado is seeing positive movement toward reducing the total number of prescriptions being filled across these three common opioids, and reducing the number of long duration prescriptions in some instances. However, more can be done to reduce the hundreds of thousands of prescriptions for opioids that get filled every year, and the percentage of longer duration fills. There is no easy solution for addressing opioid use disorder in Colorado and the U.S. and it is likely going to require a concerted, multi-pronged approach including:

- Provider education on recommended prescribing practices
- Patient education on the addictive properties of opioids
- More research and widespread acceptance of alternative pain management choices

The Colorado General Assembly has considered numerous opioid bills and encouraging steps have already been taken to reduce the number of individuals living with use disorders to prescription opioids including, but not limited to:

- Health First Colorado, the state's Medicaid program, issued new opioid prescription restrictions in 2017, limiting the duration of treatment and adding pain management consultation requirements to future refills.[iv]
- Colorado Hospital Association launched the Colorado Opioid Safety Pilot, designed to help educate Emergency Room provider to use alternatives to opioids as a first-line treatment for pain.[v]
- The Colorado Consortium for Prescription Drug Abuse Prevention works with the Colorado Department of Public Health and Environment and many other stakeholder groups including policy makers, providers, consumers and others to improve education, public outreach, research, safe disposal, and treatment. Their Take Meds Seriously and Take Meds Back public awareness campaigns are just two examples of their work.[vi]

Methodology

This analysis used claims submitted by health insurance payers (31 commercial, Medicaid and Medicare Advantage) from 2009-2017 to the Colorado All Payer Claims Database. Extended release (long-acting) versions of Oxycodone, Vicodin and Percocet were removed from the analysis to isolate short-acting opioids. These three drugs were chosen because they are among the top 20 highest volume prescription fills of all drugs in CO APCD. The drugs included brand and generic versions of the following:

Oxycodone

Oxycodone HCL 10mg tab
Oxycodone HCL 15mg tab
Oxycodone HCL 5mg tab

Percocet

Oxycodone HCL 10mg tab/Acetaminophen 325mg tab
Oxycodone HCL 15mg tab/Acetaminophen 325mg tab
Oxycodone HCL 5mg tab/Acetaminophen 325mg tab

Vicodin

Hydrocodone 10mg tab/Acetaminophen 300mg tab
Hydrocodone 10mg tab/Acetaminophen 325mg tab
Hydrocodone 10mg tab/Acetaminophen 400mg tab
Hydrocodone 10mg tab/Acetaminophen 500mg tab
Hydrocodone 10mg tab/Acetaminophen 650mg tab
Hydrocodone 10mg tab/Acetaminophen 660mg tab
Hydrocodone 10mg tab/Acetaminophen 750mg tab
Hydrocodone 2.5mg tab/Acetaminophen 325mg tab
Hydrocodone 2.5mg tab/Acetaminophen 500mg tab
Hydrocodone 5mg tab/Acetaminophen 300mg tab
Hydrocodone 5mg tab/Acetaminophen 325mg tab
Hydrocodone 5mg tab/Acetaminophen 400mg tab
Hydrocodone 5mg tab/Acetaminophen 500mg tab
Hydrocodone 5mg tab/Acetaminophen 500mg tab, UD
Hydrocodone 7.5mg tab/Acetaminophen 300mg tab
Hydrocodone 7.5mg tab/Acetaminophen 325mg tab
Hydrocodone 7.5mg tab/Acetaminophen 400mg tab
Hydrocodone 7.5mg tab/Acetaminophen 500mg tab
Hydrocodone 7.5mg tab/Acetaminophen 650mg tab
Hydrocodone 7.5mg tab/Acetaminophen 750mg tab

For more information regarding this analysis, please contact ColoradoAPCD@civhc.org. Special thanks to the CO APCD Advisory Committee and members of the Colorado Consortium for Prescription Drug Abuse Prevention for their input into this publication, and to The Colorado Health Foundation and for their support of CO APCD public reporting.

[i] Shah, A., Hayes PharmD, C. J., & Martin, PharmD, PhD, B. C. (2017). Morbidity and Mortality Weekly Report: Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. Centers for Disease Control and Prevention. Retrieved February 2018, from https://www.cdc.gov/mmwr/volumes/66/wr/mm6610a1.htm#F1_up

[ii] Dowell, MD, D., Haegerich, PhD, T. M., & Chou, MD, R. (2016). Morbidity and Mortality Weekly Report: CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. Centers for Disease Control and Prevention. Retrieved February 2018, from https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm

[iii] United States Drug Enforcement Administration. Drug Scheduling. Retrieved October 2018 from https://www.dea.gov/drug-scheduling

[iv] Willams, M. (2017, July). Colorado Medicaid to Tighten Opioid Usage Policy. Retrieved February 2018, from Colorado Department of Health Care Policy and Financing: https://www.colorado.gov/pacific/hcpf/news/colorado-medicaid-tighten-opioid-usage-policy

[v] Center for Improving Value in Health Care. (2017, August). Change Agent Profile: Colorado Hospital Association - The Colorado Opioid Safety Pilot. Retrieved February 2018, from civhc.org: http://www.civhc.org/change-agent-gallery/colorado-hospital-association-and-the-colorado-opioid-safety-pilot/

[vi] The Colorado Consortium for Prescription Drug Abuse Prevention. (2017). About the Consortium. Retrieved February 2018, from The Colorado Consortium for Prescription Drug Abuse Prevention: http://www.corxconsortium.org/about-the-consortium/

Colorado All Payer Claims Database Annual Report • 2018

Celebrating Five Years of Creating Knowledge

CIVHC
CENTER FOR IMPROVING
VALUE IN HEALTH CARE

Change Agent • *noun*
Individual or organization working to lower costs, improve care, and make Colorado healthier.

Who is CIVHC?

The Center for Improving Value in Health Care (CIVHC) is an objective, not-for-profit organization striving to empower individuals, communities, and organizations advancing the Triple Aim of better health, better care, and lower costs. Through services, health data, and analytics, we partner with Change Agents driving towards the Triple Aim for all Coloradans. We believe that together we can alter the trajectory of health care and are privileged to serve those creating a better health system for us all.

What is the CO APCD?

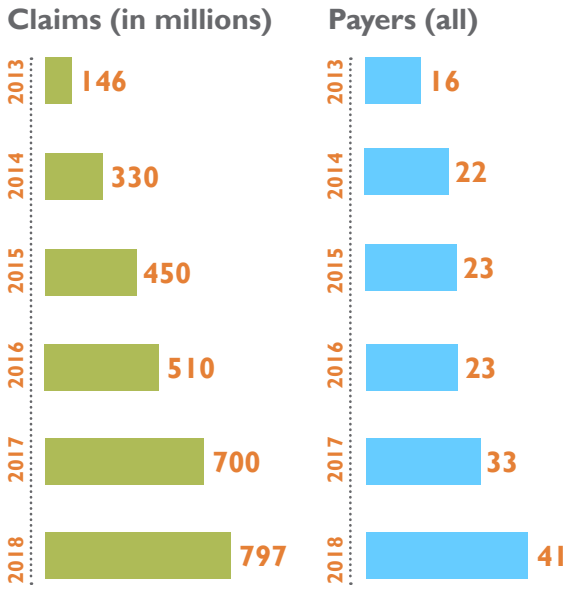
In 2010, the Executive Director of the Colorado Department of Health Care Policy and Financing (HCPF) appointed CIVHC the administrator of the Colorado All Payer Claims Database (CO APCD). The CO APCD is a state-legislated, secure health care claims database compliant with all federal privacy laws. The complexity and scale of the database grows each month. It is the only claims repository in the state that represents the majority of insured lives in Colorado, with more than nine years of data from commercial health insurance payers, Medicaid and Medicare. CIVHC makes this information available publicly and on a non-public basis to consumers, researchers, state agencies, advocacy organizations, nonprofits, and other health care organizations working to improve health care and lower costs for Colorado residents.

Previously, CIVHC reported about the CO APCD based on calendar year. In 2018, we are shifting our reporting to align with our fiscal year. This report provides information about fiscal year 2018 (July 2017 – June 2018), and reflects on the five-year anniversary and growth of this integral statewide resource.

What's in the CO APCD

The CO APCD contains claims for approximately three quarters of the covered lives in Colorado, with claims from 39 commercial health insurance plans, including Medicare Advantage and voluntarily submitted self-insured employer plans, plus Medicaid and Medicare Fee-for-Service (FFS) claims. The database has grown significantly since 2012 when CIVHC first received claims from only eight commercial payers and Medicaid.

Growth, CO APCD 2012-2018



"I was really just struck by how unique the CO APCD is, and I think that really helped us to gain some insight into the problems that we're trying to address. By hosting us as researchers and promoting our research…CIVHC is really helping us to reach out to people who are thinking about this stuff and are in a position where they can do more than sit in the ivory tower."

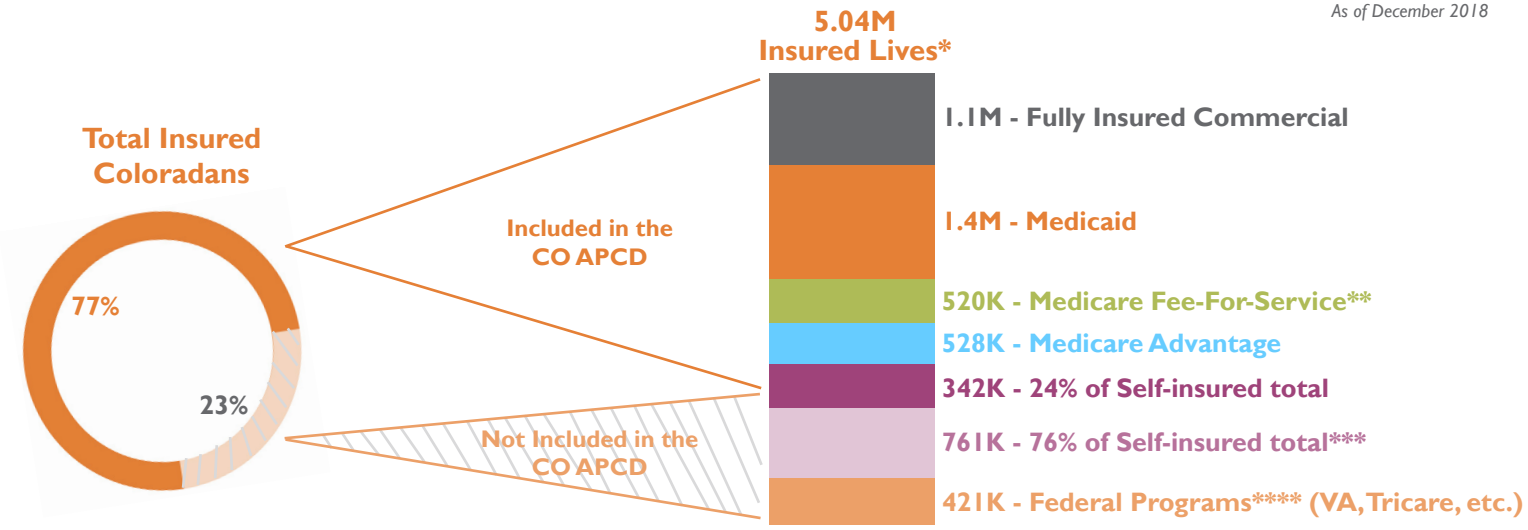
– Duke University Graduate Student

Duke UNIVERSITY

The CO APCD has medical, pharmacy and dental claims, which show what services were performed and how much they cost for both the patient and the insurance company.

Medically Insured Coloradans, CO APCD 2018

As of December 2018



*Approximate number of insured Coloradans, 2017 Colorado Health Access Survey data.
**Medicare FFS volume represents 2017 data as claims are submitted to the CO APCD one year retrospectively.
***Self-insured submissions are voluntary, and missing self-insured claims is an estimate based on assumption that self-insured commercial represent 50% of all commercial claims.
****Federal insurance program coverage is an estimate of the remaining covered lives as those claims are not submitted to the CO APCD at this time.

Payers submit claims for everyone they provide coverage to during the previous period, resulting in over four and a half million claims collected monthly.

"In the US, there are different types of insurance for different people, and we have no idea how people move through the system. All Payer Claims Databases are essentially the only way to get data to answer these system-wide questions."

- Sarah Gordon, Doctoral Candidate at Brown University

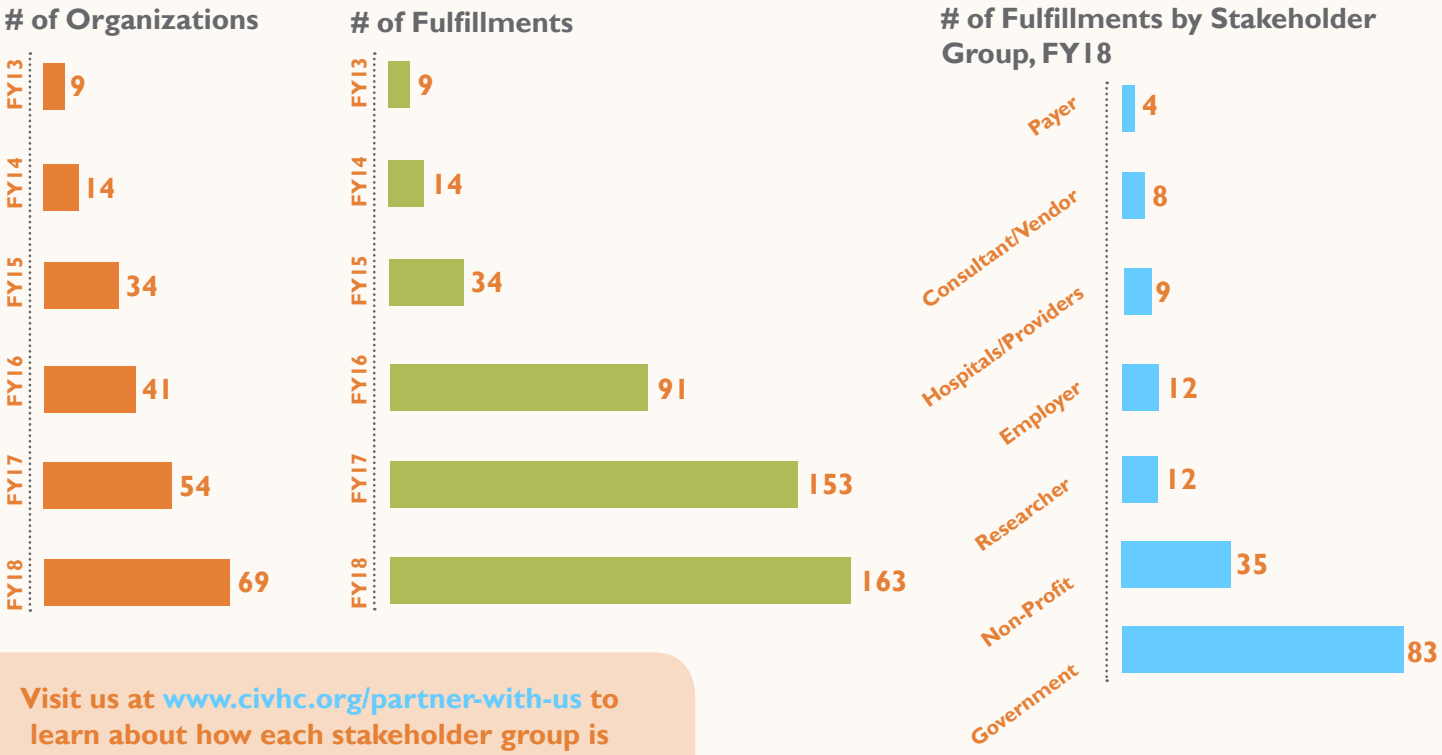
How does the CO APCD work?

When a Coloradan who has health insurance receives a health care service, the provider typically submits a claim for reimbursement to their health insurance company. Once the claim has been paid, the health insurance company submits the information for collection in the CO APCD.

What can the CO APCD do?

CIVHC releases CO APCD data in two ways: non-public releases, licensed by Change Agents working on specific projects to improve care for Coloradans; and public reporting, information on civhc.org designed to foster decision-making at all levels of the health care system, from consumers to state agencies.

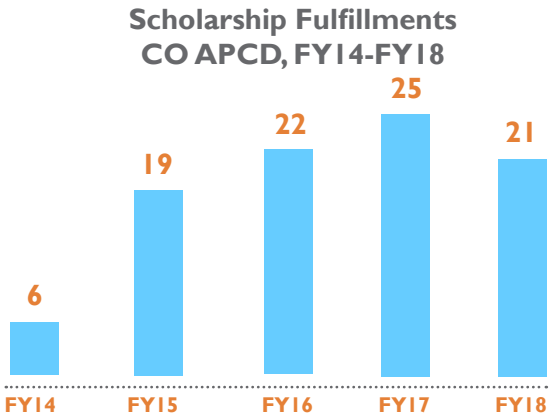
Custom Data Fulfillments, CO APCD FY13-FY18



Visit us at www.civhc.org/partner-with-us to learn about how each stakeholder group is using the CO APCD.

Prior to 2016, requests were counted by applications submitted rather than number of fulfillments provided; meaning if one request had multiple fulfillments (i.e. the State Innovation Model) it was counted once. CIVHC recognized that this did not accurately represent the true number of non-public data releases reported and began reporting each fulfillment individually.

The Colorado General Assembly established the HCPF CO APCD Scholarship Fund in 2014, allocating funds to offset the cost of data for requestors with limited resources. HCPF administers the funds, and requestors must meet specific criteria in order to be considered for the scholarship.

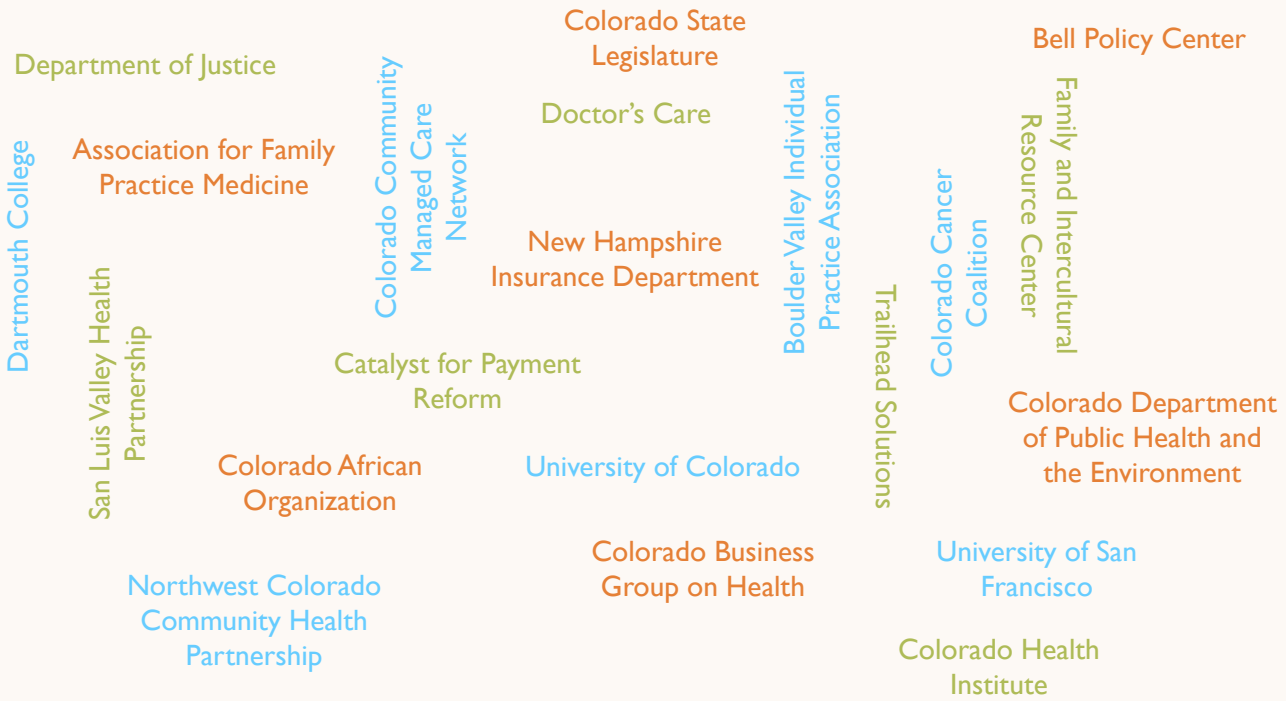


"When we started getting the CO APCD data and analyzing it, we were no longer going on assumptions. We actually have some hard facts on which to base some of our decision making."

- Ken Davis, Northwestern Colorado Community Health Partnership

Some organizations have multiple projects partially funded through the HCPF CO APCD Scholarship.

Scholarship Recipients, CO APCD FY18



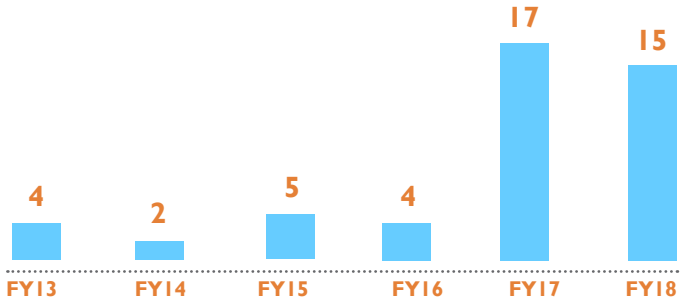
Transparent public reporting of health care information is one of the explicit purposes of the CO APCD per the enabling statute.

"In order to study market-wide phenomenon like we do, you really need a broader data set. What was so wonderful about the CO APCD is that it's both broad enough, covering so many payers and the whole state, but it's also detailed enough that you are looking at individual-level decisions."

– Duke University Graduate Student

Duke UNIVERSITY

Public Data Releases
CO APCD, FY14-FY18



Publications, CO APCD - Available at www.civhc.org

Interactive Reports

- Cost of Care
- Utilization
- Quality Measures
- Condition Prevalence
- Reference-Based Price Report

Spot Analyses and White Papers

- Cost of Care Insights
- Utilization Insights
- Quality Insights
- Chronic Condition Insights
- Imaging Cost/Quality Infographic
- Cancer Insights
- Total Cost of Care in Colorado
- Reference-Based Price Report

Data Bytes

- Firearm Injuries
- Top 25 CPTs
- Intraoperative Neuromonitoring
- Legislative Districts
  (workbook available for download at www.civhc.org)

Educational Content

- Plaintalk Blogs
- Change Agent Profiles
- CIVHC Status Blogs
- Change Agent Chats

CO APCD data is available to all stakeholders working to improve health care in Colorado. Email ColoradoAPCD@civhc.org to see if we can help you.

Sustainability of the CO APCD

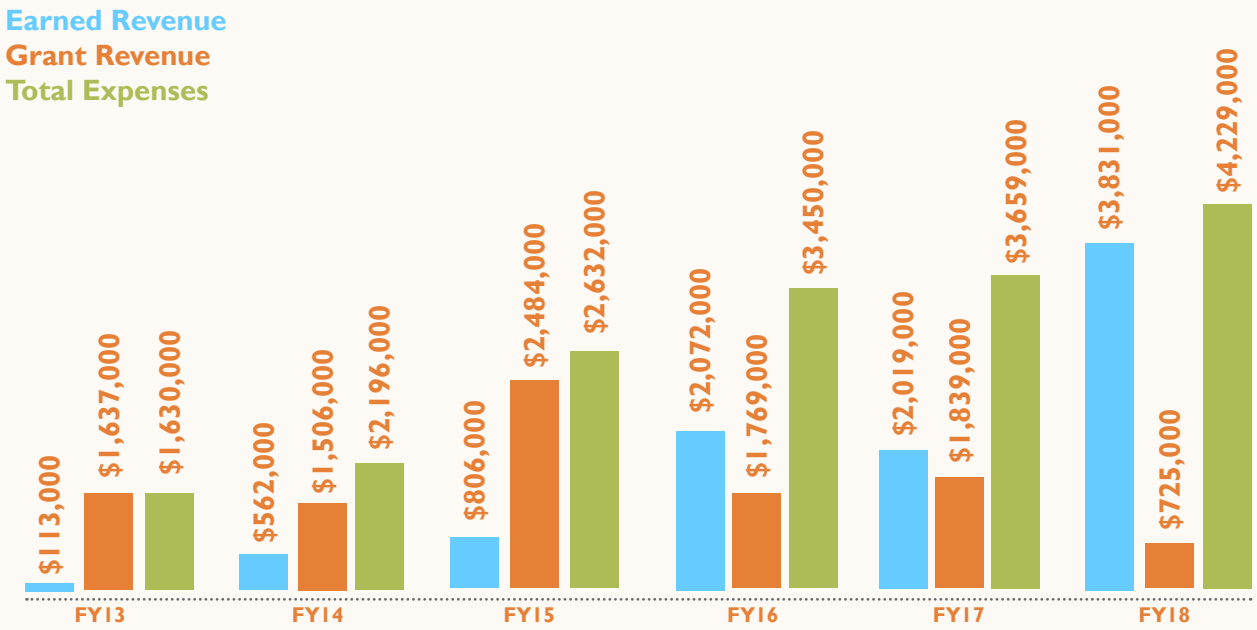
Historically, the CO APCD received no direct, ongoing operational State funding; the enabling statute specifies that all funds must be raised by the Administrator. Generous capacity-building grants from HCPF, The Colorado Trust, and the Colorado Health Foundation enabled CIVHC to develop, implement, and grow the CO APCD, contingent on its becoming a self-sustaining resource.

In early 2018, CIVHC and HCPF began the process to receive matching 50/50 funds from the Centers for Medicare & Medicaid Services (CMS). This opportunity required CIVHC to obtain half of the requested dollars in State funding. For fiscal year 2018 (July 2017 – June 2018), the Colorado Health Foundation generously granted dollars to be administered to CIVHC via HCPF, meeting the requirement for State funds for that fiscal year.

In order to obtain ongoing matching funds, it was necessary for CIVHC to secure continued support from the State. To this end, CIVHC worked with HCPF, the Joint Budget Committee, and legislators to pass House Bill 18-1327, which provides annual State funding for contractual Medicaid Operations of the CO APCD. These dollars are matched each year by CMS. Additionally, the bill formalized the grant/scholarship fund to offset data licensing fees for qualifying entities.

Ongoing infrastructure and data management costs account for approximately 82 percent of all CO APCD annual expenses. The CO APCD annual budget has increased over time due to a number of factors including an increase in data storage costs, data intake and management costs related to more submitters, and an increase in volume of public and custom analytics being produced to support the Triple Aim.

CO APCD Earned Revenue, Grant Revenue and Total Expenses, FY13-FY18



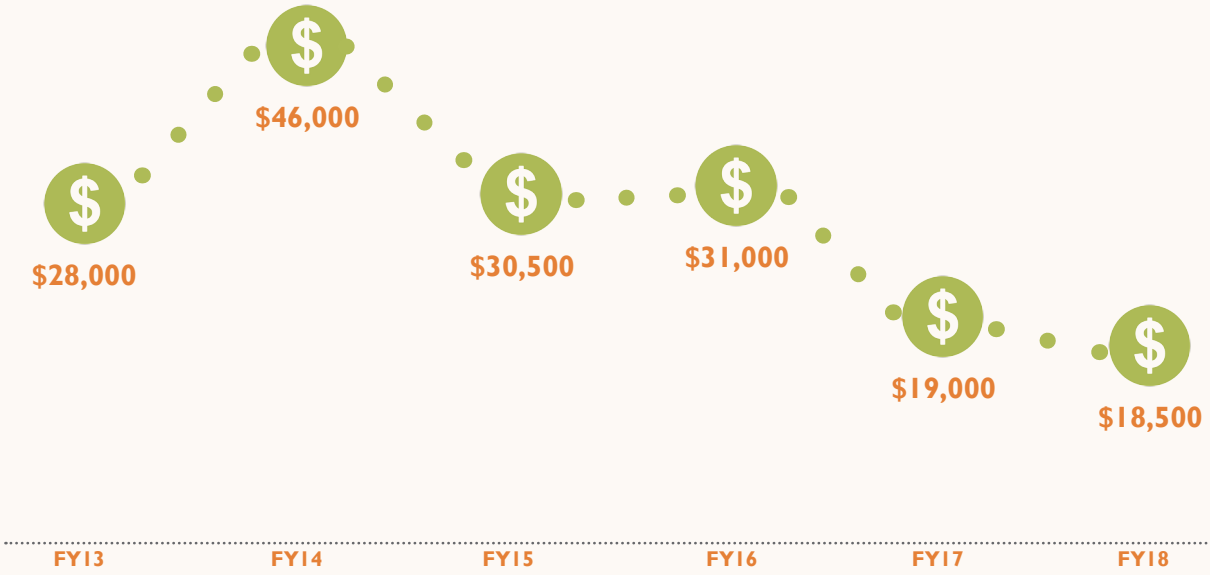
The CO APCD now contains approximately 11 terabytes of data, which costs roughly $220,000 per year to store.

The average fee for CO APCD products has decreased 60 percent since CIVHC began licensing non-public data, while the number of annual fulfillments has increased by over 1,700 percent from 2013 to 2018.

"If you don't think CO APCD data is worth the money, I would argue against that pretty quickly. The ability to double revenue is significant for any organization. So is having data to validate your internal information. It's definitely worth your time and money."

-Trampas Hutches, Melissa Memorial Hospital, Holyoke, CO

Average Data Access Fee, CO APCD, FY13-FY18



Licensing Fees, CO APCD, 2018

Standard Reports • $500-$7,000
Standard De-Identified Data Sets • $15,000-$25,000
Custom Reports • $5,000-$20,000
Custom De-Identified Data Sets • $15,000-$30,000
Custom Limited Data Sets • $20,000-$40,000
Custom Fully-Identified Data Sets • $30,000-$50,000

Creating Knowledge to Improve Lives

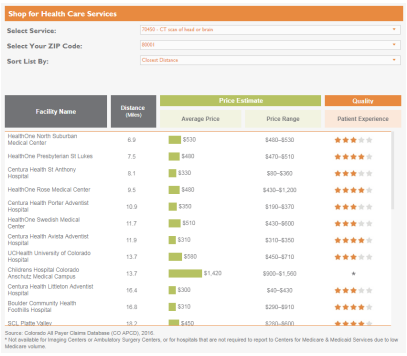
Change Agents across Colorado and the nation are taking innovative steps to break down barriers firmly entrenched in our health care system. With boundless passion, they use data to increase access to care, implement creative ways to deliver high quality care at affordable prices, and, day in and day out, fight to keep all of us healthy.

Shop for Care

In July 2018, CIVHC released a tool that allows consumers to shop for care. The tool displays price and quality information by provider for common imaging procedures, with planned additions in early 2019. The tool continues to be one of the most heavily used resources displayed on CIVHC's website.

A Way for Consumer and Employer Change Agents to Use the Shop for Care Tool

"I'm a consumer looking to shop for the highest quality, lowest cost care for a CT scan."



Select service of interest

Select zip

Compare total costs and quality at different facilities

Prices can vary by nearly $8,000 for some MRIs and CT scans depending on location, so shopping for care is one way consumers can help reduce overall health care costs and rising premiums.

"Good news. The hospital settled at the reasonable level of $2,226. Using data from Colorado All Payer Claims Database, I was able to make a case for a $14,000 reduction in the $16,385 bill. Thank you CIVHC, the information was invaluable in enabling me to achieve a fair outcome."

- Colorado Patient

What's Coming in 2019 - Shopping for Care

Procedures, 2017	New Imaging, 2017	Current Imaging, 2017
Knee Arthroscopy	X-Ray Pelvis	CT Scan Head or Brain
Cataract Surgery	X-Ray Shoulder	CT Scan Abdomen and Pelvis w/contrast
Colonoscopy	X-Ray Wrist	CT Scan Abdomen and Pelvis w/o contrast
Breast Biopsy	X-Ray Hand	MRI Scan Brain
Gall Bladder Surgery	X-Ray Knee	MRI Scan Brain w/o contrast
Upper GI Endoscopy	X-Ray Ankle	MRI Scan Spinal Canal
Tonsillectomy	X-Ray Foot	MRI Scan Pelvis w/contrast
Knee Replacement	X-Ray Abdomen	MRI Scan Arm Joint
Vaginal Birth	X-Ray Neck and Spine, 2-3 views	MRI Scan Leg Joint
C-Section	X-Ray Thoracic Spine, 2 views	Ultrasound Breast (single)
	X-Ray L-S Spine, 2-3 views	Ultrasound Abdomen (complete)
	X-Ray L-2 Spine, 4 or more views	Bone Density Test of Spine or Hips
		Heart Vessel Study Using Drugs or Excercise

Change Agents

Consumer - Colorado Consumer Health Initiative

The Colorado Consumer Health Initiative (CCHI) represents 50 nonprofit member organizations across the state, and is dedicated to ensuring that all Coloradans can get affordable, high-quality, and equitable health care.

The Question: Are Colorado hospitals adhering to the law that limits the amount they can charge low-income/uninsured patients?

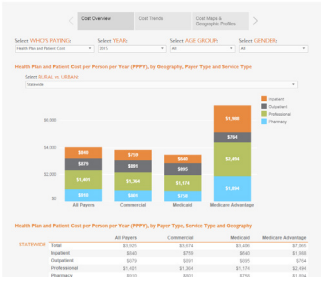
Benefit to Colorado: Lack of transparency surrounding health care pricing removes the ability of the patient to make the best decision for their care and drives up system-wide costs. This study highlighted the variation in cost among Colorado hospitals, reinforcing the need for accessible and transparent health care information.

Cost of Care

Costs to provide care to insured Coloradans vary depending on where you live, which ultimately leads to higher premiums in certain areas. Understanding how costs differ across the state helps communities, policy makers, and others begin to identify solutions to reduce variation in spending.

A Way for Government Change Agents to Use the Cost of Care Report

"I'm a legislator trying to understand costs in my district and how those compare to the state to better serve my constituency."



Overview

Look at service categories to determine where spend is the highest for payers and patients

Benchmark costs in different service categories to understand patient responsibility and evaluate affordability

The Total Cost of Care Multi-State Analysis is another resource that shows which services are the biggest cost drivers for CO.

Trends

Identify how costs have changed over time for payers and patients

Understand cost differences over time in rural and urban counties to identify possible access issues

Medicare Advantage patients are paying significantly more than they previously have. 2015 was the first year they paid more out of pocket than Commercial.

Geography

Look at your county compared to others across the state to compare costs for different services

"It is kind of exciting. This is the first project where we were looking at total cost of care as an outcome, and because CIVHC has that data, we were able to get what we needed."

– Dr. David Keller, Professor and first Vice Chair University of Colorado School of Medicine and Children's Hospital Colorado

There is not one county or region that is always highest or lowest cost for any services. Further analysis would be needed at the individual service category level to determine options for cost reduction.

What's Coming in 2019 - Cost of Care

2016 & 2017 data	Extract of Underlying Data	Medicare Fee-For-Service

Change Agents

Vendor - Mediquire

MediQuire works with health care stakeholders to accelerate the move towards value-based care.

The Question: How do provider practice patterns contribute to the utilization of higher cost place-of-service and unnecessary tests and treatments?

Benefit to Colorado: Unnecessary tests and treatments are major cost drivers in the health care system, and findings from this project could help identify ways to modify practice behavior to improve patient health while lowering costs.

Researcher - Brown University

Brown University's School of Public Health comprises 12 nationally renowned research centers and institutes, which focus on training and research on key areas including evidence-based medicine, HIV/AIDS, statistical sciences, global health, primary care, preventive medicine, and community health.

The Question: How do policies in the Affordable Care Act (ACA) impact the stability of coverage among Medicaid beneficiaries in Colorado?

Benefit to Colorado: Moving between insurers and inconsistent coverage affect the care patients receive. Information from this study could inform the need for policy decisions that can increase continuity of coverage, thereby lowering costs and improving care.

Non-Profit - Summit County Health Care Collaborative

For the past several years, Summit County Health Care Collaborative and a small group of partners have been working to identify locally-driven ways to lower health care premiums.

The Question: Why are health care costs so high in Summit County, and how do large self-insured employers impact these costs?

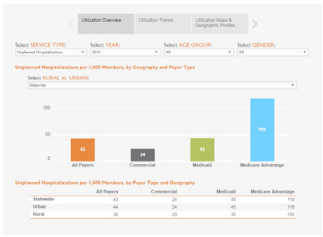
Benefit to Colorado: Findings of this research can inform efforts to improve care while lowering costs by designing programs to address these cost drivers.

Utilization

Understanding where patients are accessing health care is an important first step towards achieving the goal of "the right care at the right time and the right place." For example, some areas of Colorado have higher rates of ER visits, and identifying those areas is necessary to make sure patients have access to and are visiting the most appropriate care settings.

A Way for Provider Change Agents to Use the Interactive Utilization Report

"I'm a provider trying to understand how services are utilized in the areas I serve."



Overview

Identify rates of readmissions, emergency room visits and other services to inform where there may be opportunities for patients to get the right care at the right place at the right time

Emergency room visits and readmissions have decreased over time in the Medicaid population, likely as a result of efforts by HCPF to reduce unnecessary ED visits and provide coordinated care through accountable care models.

Trends

Compare up to four types of services to see if utilization is trending in the right direction

Geography

Find ways to better serve counties or patient populations by identifying how health care is being used compared to the rest of the state

Higher use of ED visits for one county as opposed to the state may suggest a need for more urgent care options.

"Our work has always been and remains people-centric, but it is very satisfying to confirm the impact of our services. Through data, we've been able to verify that simple things we're doing like giving people a ride to the grocery store or to their doctor's appointment, or installing a ramp or a grab bar can exponentially impact people's ability to live the life they want to live and stay as healthy as possible."

- Denver Regional Council of Governments

What's Coming in 2019 - Utilization

2016 & 2017 data	Extract of Underlying Data	Medicare Fee-For-Service

Change Agents

Non-Profit - Colorado African Organization

Colorado African Organization (CAO) is a nonprofit organization that exists to support Colorado's refugee, immigrant, and asylum-seeking populations in their pursuit of integration, self-sufficiency and freedom.

The Question: How does CAO's Community Navigation Program impact the population of refugees and immigrants as well as the broader community?

Benefit to Colorado: CAO's findings will enhance the evidence base surrounding hospitalization and emergency room utilization. Change Agents can use these findings as a foundation for future program design that improves care and lowers costs.

Provider - Northwest CO Community Health Partnership

The Northwest Colorado Community Health Partnership (NCCHP) is made up of community and safety net organizations, health care providers, and government agencies covering Jackson, Moffat, Rio Blanco and Routt counties.

The Question: Why are patients in NCCHP's service area going to the emergency department, and how often are those visits potentially avoidable?

Benefit to Colorado: This report is being used to help reduce emergency department visits for health issues that could be treated in a doctor's office, clinic, or urgent care settings, resulting in lower costs.

Researcher - Health Data Compass

Health Data Compass is a health data warehouse that integrates data from the University of Colorado Hospital, Children's Hospital Colorado, CU Medicine, and University of Colorado Denver to support a broad range of research at these four institutions.

The Question: Is it possible to create a map of care for patients seen across many care settings and systems?

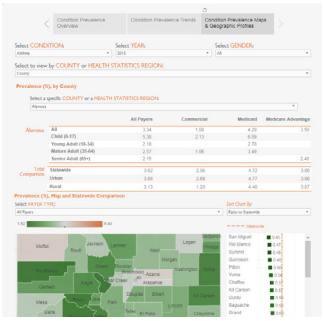
Benefit to Colorado: Maps of care will help create more complete records of patient treatment. The example of Health Data Compass can inform opportunities for care coordination across teams, resulting in better outcomes.

Condition Prevalence

Health conditions like diabetes, asthma and cancer can prohibit Coloradans from leading healthy and active lives as well as be costly to treat. The percent of people with chronic health conditions across the state can vary significantly depending on geography, pointing to opportunities for communities to reduce disparities.

A Way for Reasearcher Change Agents to Use the Condition Prevalence Report

"I'm a researcher wanting to understand overall rates and patterns in chronic condition and cancer prevalence across the state of CO."



Overview

Identify how prevalence for different conditions may be higher or lower depending on demographics to isolate research opportunities and investigate potential causes and prevention options

Use the Quality Report to compare prevalence of cancers and chronic disease, as well as utilization of preventive screenings.

Trends

Identify how prevalence of different conditions is changing over time

Understand which counties have high prevalence of conditions to identify potential areas of research

Not all condition increases indicate a negative outcome, though all increases indicate a larger population needing more care. Increased cancer rates indicate that more people are being diagnosed and surviving.

Geography

Look at different programs or services offered to those counties with lower rates to determine effective strategies for reducing harmful conditions

"Until the creation of All Payer Claims Databases and states like Colorado that allow access to the data, there wasn't a claims resource for researchers to use to understand commercial, Medicare and Medicaid data, making it impossible to get a comprehensive understanding of spending for specific diagnoses. By combining data from the CO APCD with other databases available nationally, we are able to more accurately identify what we're spending on skin cancer."

– Emily Ruiz, MD, MPH - Brigham and Women's Hospital

Asthma prevalence is significantly higher in the southeast part of the state. Research could be conducted to identify the factors associated with this higher prevalence.

What's Coming in 2019 - Condition Prevalence

2016 & 2017 data	Extract of Underlying Data	Medicare Fee-For-Service

Change Agents

Researcher - American College of Chest Physicians

The American College of Chest Physicians (CHEST) is the global leader in advancing best patient outcomes through innovative chest medicine education, clinical research, and team-based care.

The Question: Are there gaps in how patients with asthma and Chronic Pulmonary Obstruction Disease (COPD) are diagnosed and treated in Colorado?

Benefit to Colorado: Results of this investigation can improve quality of care for patients with asthma and COPD in Colorado, across the US and internationally. For those designing interventions, these findings could provide valuable information, leading to improvements in health outcomes and lowered health care costs.

Provider - Lanig Family Fund

The Lanig Family Fund is committed to supporting cross-sector collaboration that improves the health and health-related quality of life for those with paralysis due to spinal cord injury and similar acquired disabilities.

The Question: How many individuals in Colorado have spinal cord injuries, where do they receive care, and what costs are associated with treatment?

Benefit to Colorado: This study is the first step in understanding how patients with spinal cord injuries interact with the health care system in Colorado. Such information can help increase awareness of the issues impacting these individuals and drive system change toward one more inclusive of all with physical disabilities.

Researcher - UCD Behavioral Sciences

The mission of the Health and Behavioral Sciences Department at the University of Colorado, Denver is to apply social science theory and innovative research methods to critically address emerging issues in health.

The Question: Does a breast cancer patient's socio-economic status or health insurance plan impact their access to potentially life-saving, but expensive, genetic testing?

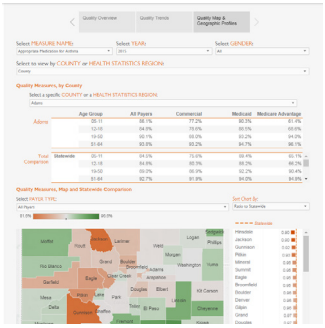
Benefit to Colorado: Findings from this project may show how differences in health insurance coverage are related to socio-economic status and how these differences can lead to health disparities. Armed with this information, interventions could be designed to improve care and lower costs for vulnerable populations.

Quality of Care

Your chances of receiving appropriate care for a chronic condition like diabetes and the likelihood of getting preventive screening for things like breast and colon cancer vary depending on what part of the state you live in. Understanding and addressing inequities in the quality of care starts with understanding where disparities exist.

A Way for Public Health Change Agents to Use the Quality Report

"I'm a public health agency wanting to understand how preventive services are being accessed and how they compare across the state"



Overview

Understand how often preventive services are being accessed for insured populations to identify where to focus community and provider engagement

Under the ACA, insured patients don't have to pay out of pocket for preventive screenings, so low rates indicate a potential need to raise consumer awareness on the importance of preventive screening, and improve effective community outreach.

Trends

Understand what preventive service utilization and quality of care look like over time to evaluate if public health efforts previously implemented have been making an impact

Geography

When developing strategic focus areas and community health assessments, see how the county you serve compares to others on preventive screenings and appropriate care for chronic conditions

For regions with higher quality care, there is an opportunity to understand best practices and programs that could be duplicated in other areas.

"The value of neutral, de-identified data in large volumes, representing the majority of Colorado, is that it's hard to argue with analytics based on millions of data points. This big data helped us see where we are in the big picture and enables us to have honest conversations and help answer pressing health care questions."

- Cameron MacDonald, American Physical Therapy Association - CO Chapter

What's Coming in 2019 - Quality of Care

2016 & 2017 data

Extract of Underlying Data

Medicare Fee-For-Service

New Measures! Medication Management for Asthma, Diabetes Eye Exam

Change Agents

Non-Profit - Colorado Children's Healthcare Access Program

Colorado Children's Healthcare Access Program (CCHAP) is a nonprofit organization whose mission is to promote and support medical homes to improve health outcomes for children and advance health equity.

The Question: How have recent practice interventions impacted the number of children on Medicaid seen at emergency departments or urgent care for conditions better treated in a medical home?

Benefit to Colorado: Preliminary results suggest that emergency department visits have been cut in half, resulting in significant savings. The lessons from this study could encourage shifts in treatment settings to lower costs and improve care for young and vulnerable Coloradans.

Researcher - Kaiser Permanente Research

The Kaiser Permanente Colorado Institute for Health Research (IHR) is a research department integrated into a health care delivery system that conducts, publishes, and disseminates epidemiologic, behavioral, health services, implementation and clinical research.

The Question: Can opioid use be understood and reduced by identifying gaps in insurance coverage for Medicaid beneficiaries and where they go for care?

Benefit to Colorado: This research will provide key evidence about opioid use, overdose, and the impacts of expanded access to overdose treatment. This knowledge can inform the creation of programs and interventions to help those living with opioid use disorders.

Researcher - UCD Cardiac Testing

The University Of Colorado School of Medicine is committed to lifelong and interdisciplinary learning for health care professionals.

The Question: How often are low-value cardiac stress tests performed, and why do hospitals perform them?

Benefit to Colorado: Identifying effective measures to reduce use of these tests can help improve patient outcomes and reduce health care costs.

The CO APCD provides a neutral, unbiased guide to help navigate Colorado's health care landscape. Such a transparent guide is necessary now more than ever as efforts are underway to herald fundamental shifts in how health care is paid for and administered.

Public CO APCD data releases, like the interactive Shop for Care reports and Reference-based Price analysis, provide consumers, organizations, communities, legislators, and more with access to information to inform help lower costs and improve quality of care. Non-public, custom CO APCD releases support the specific needs of Change Agents from state agencies and public health entities working to foster healthy populations to providers and hospitals focused on improving the lives of their patients.

Visit **www.civhc.org** to learn more, view the Appendices of this report, and access public CO APCD data.

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Employer		Analysis of spending on health care services for covered members.	Standard Report
Employer		Analyze spending on health care services for covered members.	Standard Report
Employer		Analyze spending on health care services for covered members.	Standard Report
Hospital / Provider Group		Investigate costs of specialty services for their members	Standard Report
Hospital / Provider Group		Assess variation in care for high-risk populations and interface across health systems, such as home health, mental health services, durable medical equipment, pharmacy, Vendor / Consultant ancillary services and Vendor / Consultant community providers.	Fully-Identifiable Data Set
Hospital / Provider Group		Reduce variation in care for specific pediatric diseases by investigating supply utilization, length of stay, and complication rates among children undergoing appendectomies.	Fully-Identifiable Data Set
Hospital / Provider Group		Examine utilization and costs of care among patients served by this nonprofit and individuals residing in specific neighborhoods.	Fully-Identifiable Data Set
Hospital / Provider Group		Understand patient care patterns outside of the community to inform enhancing service offerings to better meet the needs of the population.	Standard Report
Non Profits / Advocacy		The American College of Chest Physicians (CHEST) is proposing a project designed to improve understanding of the diagnosis and treatment of asthma and COPD in Colorado residents. Specifically, the project will investigate a number of key questions in order to illuminate gaps in care and develop the basis for quality improvement recommendations.	Limited Data Set

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Non Profits / Advocacy		Help Coloradans make informed decisions regarding health insurance plans and improve transparency by analyzing the cost of specialty prescription drugs.	Standard Report
Non Profits / Advocacy		Help Coloradans make informed decisions regarding health insurance plans and improve transparency by analyzing the cost of specialty prescription drugs.	Standard Report
Non Profits / Advocacy		Help Coloradans make informed decisions regarding health insurance plans and improve transparency by analyzing the cost of specialty prescription drugs.	Standard Report
Non Profits / Advocacy	Yes	Explore the impact of respite services on health outcomes, costs of health care utilization, and quality of life for caregivers and care receivers. The study will also include exploration of the perceived adequacy and availability of respite services, as well as the need for more training, more awareness building, and / or more funding for respite services.	Limited Data Set
Non Profits / Advocacy	Yes	Research and demonstrate how a Community Navigation Program provides not just individual benefits for the narrow population of refugees and immigrants that it serves, but also broader community impacts and model associated with improved health and reduced costs.	Custom Report
Non Profits / Advocacy		Understand out-of-pocket costs in light of the changes with the Affordable Care Act to support patient access to care.	Standard Report
Non Profits / Advocacy	Yes	Help Colorado better understand the extent to which our system is oriented toward primary care.	Custom Report
Non Profits / Advocacy	Yes	Analyze spending and utilization rates for select procedures on a named provider and payer basis based on Colorado Division of Insurance (DOI) geographic rating regions.	Custom Report
Non Profits / Advocacy	Yes	Study the utilization of low density CT scanning for lung cancer screening of individuals with a significant tobacco smoking history.	Custom Report
Non Profits / Advocacy	Yes	Integrate data from the CO APCD with Electronic Health Record data to produce utilization, cost and quality indicator reports to support safety net population health	Fully-Identifiable Data Set

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Non Profits / Advocacy	Yes	Assess the cost impact of providing premium sponsorship to individuals who would otherwise not be able to afford insurance or who would have chosen a Bronze plan based on the cost of the premium.	Fully-Identifiable Data Set
Non Profits / Advocacy	Yes	Analyze claims data and data from local self-funded employer sponsored plans (not currently captured within APCD data) to address potential factors which may be driving costs.	Standard Dataset
Non Profits / Advocacy		Assist legislative efforts to show the costs of prescription drugs by geography, district, pharmacy, and payer for a specific chronic condition.	Standard Report
Non Profits / Advocacy		Understand how the prices that insurers pay physicians for medical care respond to the public sector's reimbursement rates.	Limited Data Set
Non Profits / Advocacy		Evaluate Health Systems and performance. Looking at organization structure and care integration.	Limited Data Set
Non Profits / Advocacy		Assist legislative efforts to show the costs of prescription drugs by geography, district, pharmacy, and payer for a specific chronic condition.	Standard Report
Non Profits / Advocacy		Assist legislative efforts to show the costs of prescription drugs by geography, district, pharmacy, and payer for a specific chronic condition.	Standard Report
Non Profits / Advocacy		Determine how total cost of care and use of health care services at the practice level varies across different regions of the U.S. and Colorado to help physicians identify ways to improve quality and lower costs.	Custom Report
Non Profits / Advocacy	Yes	Describe health conditions, health care utilization and cost indicators for the population served by this nonprofit, in the region as a whole, by county groups, county and by zip code when data allows (see list of counties below).	Custom Report
Non Profits / Advocacy		Assist legislative efforts to show the costs of prescription drugs by geography, district, pharmacy, and payer for a specific chronic condition.	Standard Report

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Non Profits / Advocacy		Identify the relationship between customized nutrition and the overall health and well-being of individuals, a relationship that reduces healthcare costs through fewer hospital readmissions, fewer complications, and reduced overall utilization.	Custom Report
Non Profits / Advocacy	Yes	Understand a baseline for care provided outside a specific geographic area and to track gaps in services, costs to the local community to travel, health status, and health-sector workforce shortages such as PCP, Behavioral Health.	Standard Report
Payers		Understand how their hospital and physician discounts compare to Vendor / Consultant payers in the Colorado market. No Vendor / Consultant payers were listed by name in the report received by this payer.	Custom Report
Payers		Examine patient characteristics and risk factors associated with complications of opioid use, assess the use of naloxone (a medicine to treat overdose) among patients, and determine the risk of adverse events from naloxone administration.	Fully-Identifiable Data Set
Researchers / Academic		Study the effects of policies designed based on Behavioral Economics that have the potential to increase the welfare of Colorado residents and maintain the stability of the non-group health insurance market.	Limited Data Set
Researchers / Academic		Characterize changes in insurance coverage among Medicaid beneficiaries over time and evaluate the impact of Colorado's Medicaid expansion on continuity of Medicaid coverage.	Limited Data Set
Researchers / Academic	Yes	Evaluate urban-rural disparities in healthcare utilization and quality for children with social risk factors and chronic illnesses.	Limited Data Set
Researchers / Academic		Investigate the effect of Colorado's health exchange on healthcare utilization and how the variation in exchange premiums across the state is affected by the interaction of market structure, selection, and location - working to inform policy and care	Limited Data Set
Researchers / Academic		Study the extent of adverse selection problems in three markets, the Colorado ACA Marketplace, Medicare Advantage, and Medicaid Managed Care.	Limited Data Set
Researchers / Academic	Yes	Understand what clinical resources adults with chronic complex childhood conditions need and what policies help them obtain those resources.	Limited Data Set

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Researchers / Academic		Create an enterprise health data warehouse that integrates data from several sources to support a broad range of clinical and translational research, population and public health purposes for these Institutions.	Limited Data Set
Researchers / Academic		Analyze the prescribing and treatment patterns at different cancer stages by provider type, insurance reimbursement model, and by distance to specialized care.	Limited Data Set
State Agency		Investigate the complexity of APR-DRGS for the Medicaid population.	Custom Report
State Agency		Compare episode of care costs between Commercial and Medicaid	Custom Report
State Agency		A risk adjusted analysis across payers.	Custom Report
State Agency		Explore access to care and provider participation for the Medicaid population.	Custom Report
State Agency		This project will help Colorado better understand the extent to which our system is oriented toward primary care.	Custom Report
State Agency	Yes	Support a strategic and targeted outreach effort to increase access and use of Long Acting Reversible Contraceptives (LARCs) among women using contraceptives in Colorado.	Custom Report
State Agency	Yes	Find common solutions to workforce data needs and to form effective collaborations for the collection, management, sharing, and distribution of health professional workforce data among members of the consortium (see Type of Information Requested for additional details regarding project / prototype purpose).	Custom Report
State Agency		Improve hepatitis C virus (HCV) surveillance, screening practices, and clinical outcomes by accurately characterizing the HCV epidemic in Colorado.	Limited Data Set

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
State Agency		Financially analyze, evaluate, and model claims data to support the a statewide health care transformation project, focusing on the integration of behavioral health care services with physical health care services in primary care settings.	Custom Report
State Agency		Compare the rates of psychotropic drug prescription in the Medicaid Foster Care population, the Medicaid population 0-18, and the Commercial population 0-18 from 2012-2016.	Custom Report
State Agency	Yes	Create a report that shows top CPT codes by volume. The goal is to inform on what is considered a fair out of network paid amount.	Custom Report
State Agency	Yes	Determine the magnitude of the population who may be eligible for physical therapy as a valid alternative to an opiate prescription for certain conditions.	Custom Report
State Agency		Study how variation in different health care markets' competitive structures drives variation in health care provider prices.	Limited Data Set
State Agency	Yes	Complete an annual report that includes comparison and analysis of this state's claims data to insurance claim data collected by Vendor / Consultant states.	De-Identified Data Set
State Agency		Help clinicians transform their practices by making organizational changes. This project provides network support, education, and technical assistance with Health Information Technology to practices nationwide.	Custom Report
State Agency	Yes	Determine ways to measure and address the opioid problem and develop tools to help combat the opioid epidemic.	Limited Data Set
Vendor / Consultant		Multi-payer initiative fostering collaboration between public and private health care payers to strengthen primary care.	Fully-Identifiable Data Set
Vendor / Consultant	Yes	Measure payment reform activity in Colorado.	Custom Report

Custom CO APCD Data Requests 2018

Stakeholder Type	Scholarship	Project Purpose	Product Type
Vendor / Consultant		Determine the prevalence of medical conditions potentially related to the consumption of drinking water (surface or well water) containing elevated concentrations of molybdenum in certain Colorado counties.	Custom Report
Vendor / Consultant		Understand how the prices that insurers pay physicians for medical care respond to the public sector's reimbursement rates.	De-Identified Data Set
Vendor / Consultant		Measure insurance churn in the market place.	Limited Data Set
Vendor / Consultant		Evaluate the impact of targeted digital advertising on preventive care patterns and access to care for 18-34 year old rural Coloradans.	Custom Report

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Cost of Care in Colorado

Insights from the Colorado All Payer Claims Database interactive public reports @ www.civhc.org

Overview

It takes nearly **$4,000** Per Person Per Year (PPPY) to cover the health care needs of most Coloradans*

*Medicaid, Commercial, & Medicare Advantage covered lives

Rural vs. Urban

In general, **expenses for rural Coloradans are higher.**

Commercial

Rural
- Health Plan: $3,200 PPPY
- Patient: $800 PPPY

Urban
- Health Plan: $2,600 PPPY
- Patient: $600 PPPY

Rural Medicare Advantage patients pay **nearly double the out-of-pocket costs** annually compared to urban residents.

Medicare Advantage

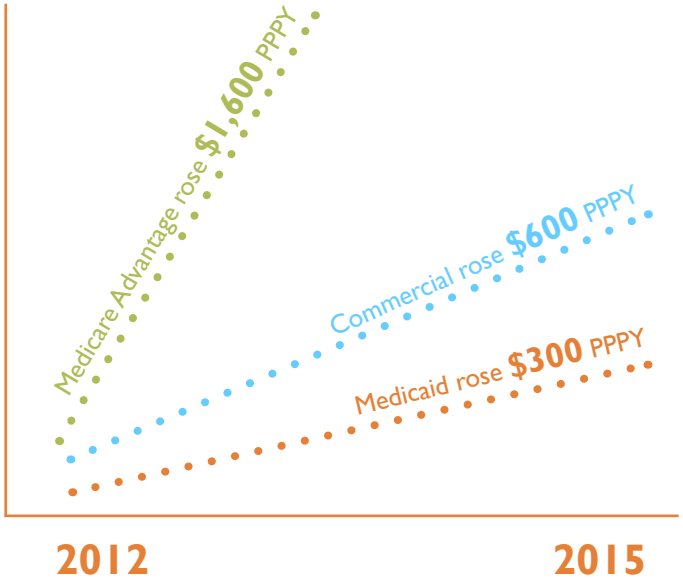
Rural
- Health Plan: $6,700 PPPY
- Patient: $1,100 PPPY

Urban
- Health Plan: $5,300 PPPY
- Patient: $600 PPPY

Trends

Between 2012-2015, costs to pay for **health care expenses rose an average of 6%*** across all payers.

*average of $600 per PPPY



Across all payers, **Females cost more than Males** *PPPY.*

...and females are most expensive between ages 35-64, and 65+.

Service Costs

The **biggest increase** in costs across all payers is in the **pharmacy service category**. Medicare Advantage had the highest increase in pharmacy, from **$440 PPPY to $1,900 PPPY**.

SERVICE CATEGORY PERCENT CHANGES FROM 2012-2015

PHARMACY SERVICES ↑ 27%

OUTPATIENT (clinic) **SERVICES** ↑ 4%

INPATIENT (hospital) **SERVICES** ↓ 2%

PROFESSIONAL (clinician) **SERVICES*** ↑ 4%

*Professional services typically occur in inpatient, outpatient, or clinic settings and are typically billed separately.

County Profiles

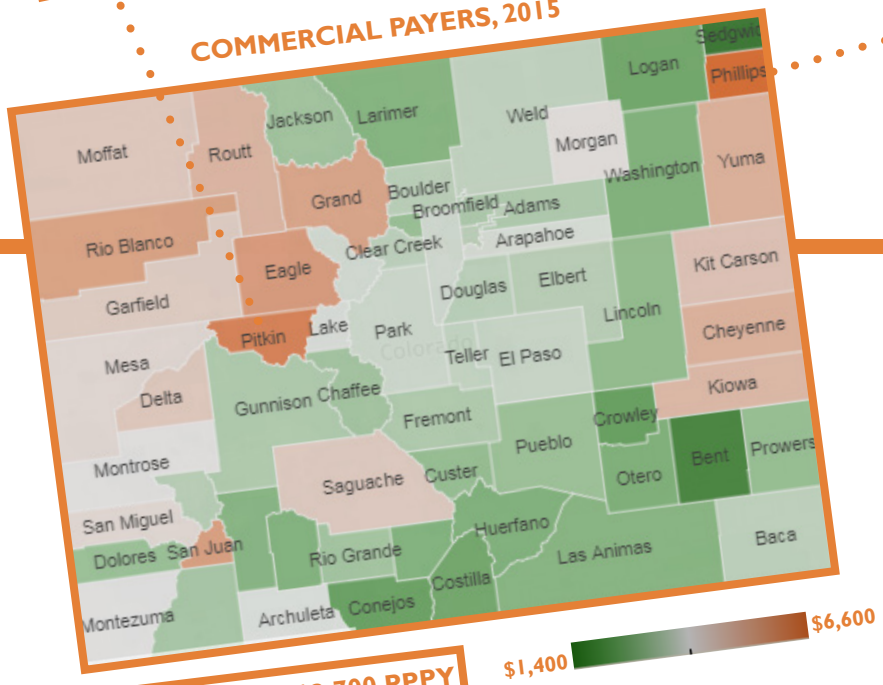
$6,000 PPPY

Pitkin County is 68% above the median per person per year cost for the state.

$6,600 PPPY

Phillips County is 83% above the median per person per year cost for the state.

COMMERCIAL PAYERS, 2015



Statewide Median $3,700 PPPY

In 2015 Commercially insured annual costs were **higher in some Western Slope areas and Eastern Plains areas,** *and* **lower in the Front Range and Southeast areas** *of the state.*

To learn more, visit us at:
www.civhc.org/get-data/interactive-data/statewide-metrics/cost-of-care

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Utilization in Colorado

Insights from the Colorado All Payer Claims Database interactive public reports @ www.civhc.org

Overall Trends Across All Payers 2012-2015

EMERGENCY ROOM VISITS

6.3%

Only Medicaid decreased (0.7%)

OBSERVATION STAYS

3.7%

Medicare Advantage decreased most (-10%)

UNPLANNED HOSPITALIZATIONS

1.7%

Only Medicare Advantage decreased (1.3%)

30-DAY READMISSIONS

0.7%

Only Commercial increased (7.3%)

In general, **Rural** counties have more **OUTPATIENT SERVICES*** than **Urban** counties. **Western Slope counties Mesa and Delta** have some of the highest rates of outpatient services.

*Health care visits received in a hospital-based outpatient setting or ambulatory surgery center.

Unplanned Hospitalizations - Rates/1000 Members

Rural 44

Urban 36

*2015

Rates by payer **did not vary** much among the young population **(0-17)**, but **did vary significantly** statewide in the older population **(65+)**.

Ages 65+ Medicaid **191** Commercial **81**

Medicare Advantage **118**

Medicaid **43**

Commercial **24**

*2015, Statewide

ER Visits - Rates/1000 Members

Medicaid **581**

Medicare Advantage **322**

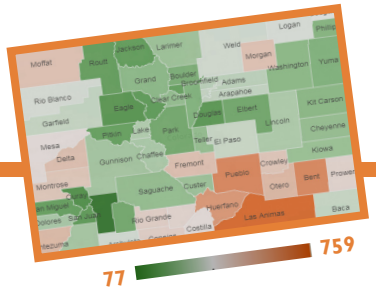
Commercial **131**

*2015, Statewide

Rural has **higher** ER rates for **Medicare Advantage**...

...but **Urban** is **higher** for **Commercial and Medicaid.**

Counties in **Southern CO** *have the* **highest levels of ER Visits in all age groups**.



30-Day Readmissions

The 30-day readmissions rate is **highest for the age group 65+.**

Within this group, the population covered by Medicaid had a readmission rate nearly **five times higher** than the Commercial and Medicare Advantage popuations.

Medicaid 51

Medicare Advantage 13

Commercial 10

Pharmacy Scripts

Statewide Average:
10.8 Medications per person,
of those, **8.7 Generic**

TRENDS

All Medications	Generics Only
Commercial **5%** ↑	Commercial **4%** ↑
Medicaid **4.7%** ↑	Medicaid **5.3%** ↑
Medicare Advantage **2.3%** ↓	Medicare Advantage **3.3%** ↓

To learn more, visit us at:
www.civhc.org/get-data/interactive-data/statewide-metrics/utilization

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Quality Measures in CO

Insights from the Colorado All Payer Claims Database interactive public reports @ www.civhc.org

Overall

Prescriptions for Asthma

89% of Coloradans receive appropriate prescriptions for asthma

Highest Quality of Care (all payers, statewide)

Colorectal Cancer Screening

Only **28%** of Coloradans get colorectal cancer screening

Lowest Quality of Care (all payers, statewide)

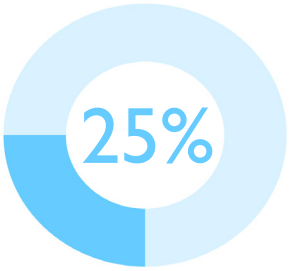
Breast Cancer Screening

Women in rural counties have a **lower percentage** of breast cancer screening **than women in urban counties.** **(all payers, statewide)**

58% of Urban

49% of Rural

Diabetes A1c Testing



1 in 4 diabetes patients DO NOT receive their A1c test at least once a year. **(all payers, statewide)**

Trends

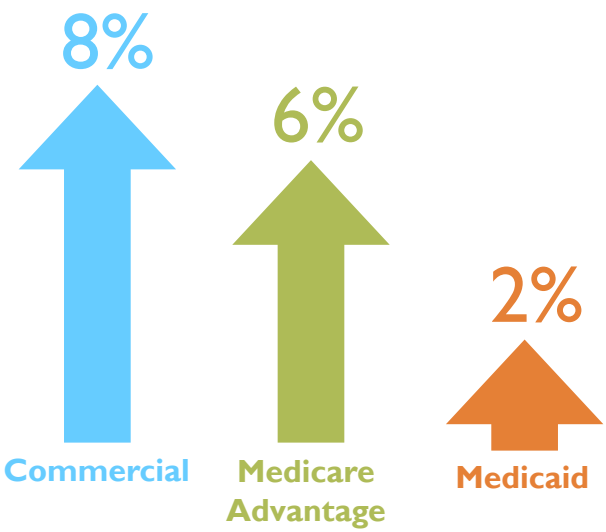
Colorectal Cancer Screening

Cervical Cancer Screening

Colorectal cancer screening and **cervical cancer screening** have both **increased in the Commercial population** since 2012, but have **declined in the Medicaid and Medicare Advantage Populations.**

Breast Cancer Screening

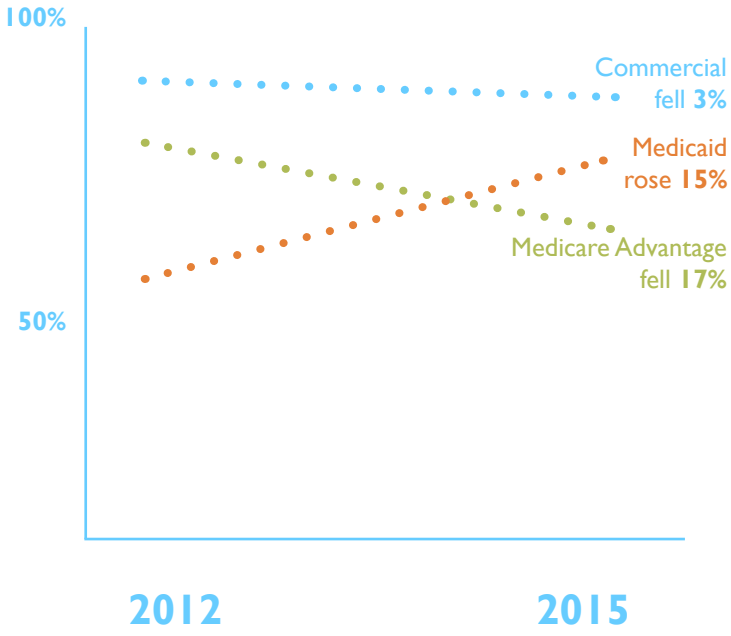
Across all payers, more patients are receiving **breast cancer screening than** they did in **2012.**



Trends

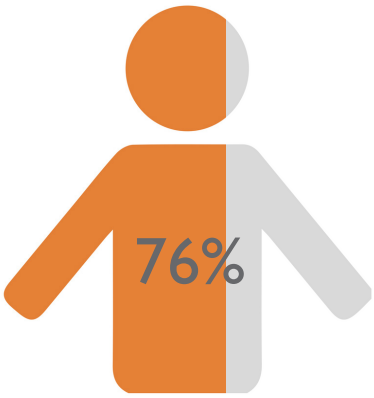
Diabetes A1c Testing

Diabetes A1c testing from **2012-2015** **varies greatly** by payer.



Prescription for Asthma

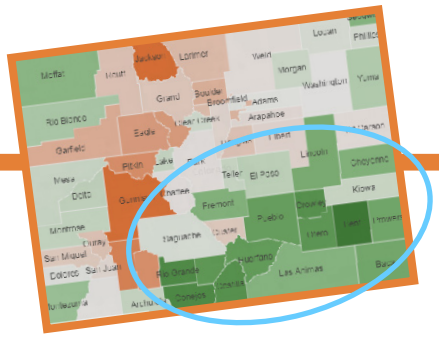
The lowest rate in prescriptions for **asthma** is for **kids (5-11) with Commercial insurance.**



Only 76% are receiving **appropriate treatment...**

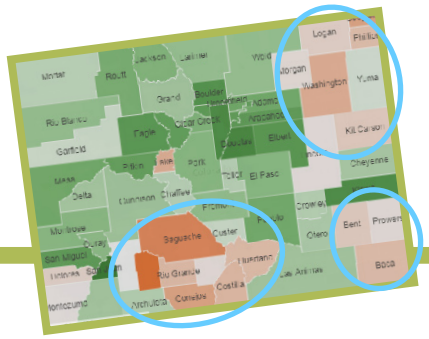
...A 5% DECREASE FROM 2012.

Geographic Variation



Southeast CO has the highest percent of people receiving **appropriate prescriptions for asthma.**

Denver Metro Counties, as well as Boulder and Mesa Counties, have the highest percent of **colorectal screenings**, yet **over 60%** of people in these areas still **do not** receive a screening.



In 14 rural counties, 60-78% of women do not receive **breast cancer screenings.**

LOWER RATES — HIGHER RATES

To learn more, visit us at:
www.civhc.org/get-data/interactive-data/statewide-metrics/quality-measures/

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Chronic Conditions in CO

Insights from the Colorado All Payer Claims Database interactive public reports @ www.civhc.org

Conditions Snapshot

Hypertension

12% of Coloradans were diagnosed with **hypertension** in 2015

Hypertension is the disease **diagnosed most frequently** among insured Coloradans

- **Hypertension** is more prevalent in older age groups with marked differences between payer types

Hypertension Prevalence in Adults, 35-64

Medicaid	16.5%
Commercial	8.6%

Depression

5.1% of Coloradans had a **depression** diagnosis in 2015

Since 2012, **depression** has increased...

26%

All Payers

Depression is highest among mature adults, 35-64

7.2% of females

3.7% of males

Diabetes Type II

4.8% of Coloradans had a **diabetes type II** diagnosis in 2015

Diabetes type II is highest in the **Medicare Advantage** population

Diabetes Type II Rates, 2012-2015

Overall, **diabetes type II is up 10%** since 2012

Medicare Advantage	27%
Medicaid	-9.7%
Commercial	-2.1%

Asthma

3.6% of Coloradans have **asthma**

Asthma rates have gone down across all payers since 2012

14.4%

- **Asthma** is more prevalent in children with marked differences between payer types

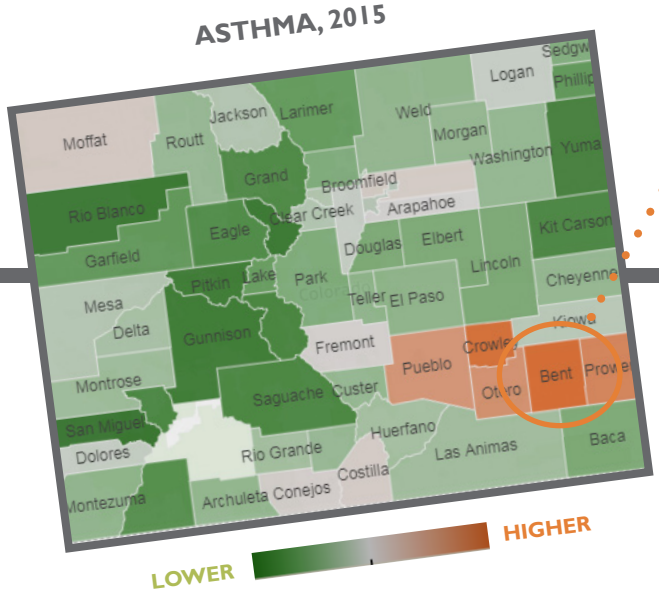
Asthma Prevalence in Children, 0-17

Medicaid	6.03%
Commercial	3.96%

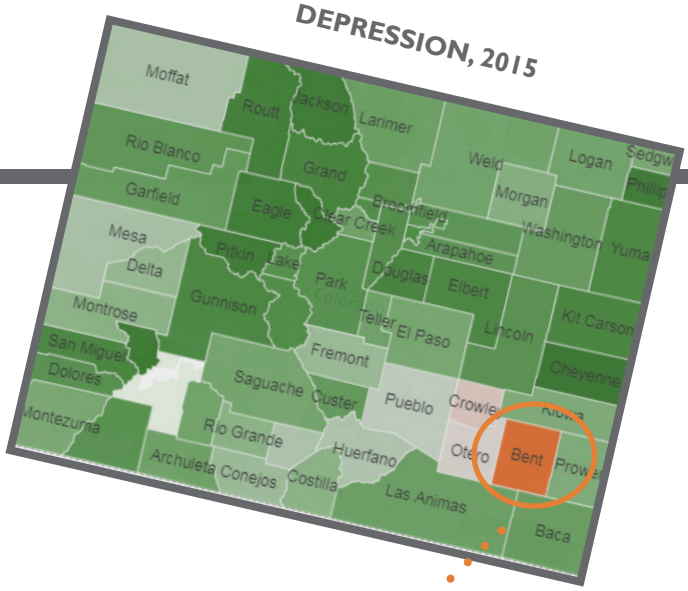
In general, **asthma, depression, and diabetes type II** *rates are* **highest in the Southeast** *portion of the state.*

Bent County is **78% higher** than statewide prevalence for **asthma**

ASTHMA, 2015

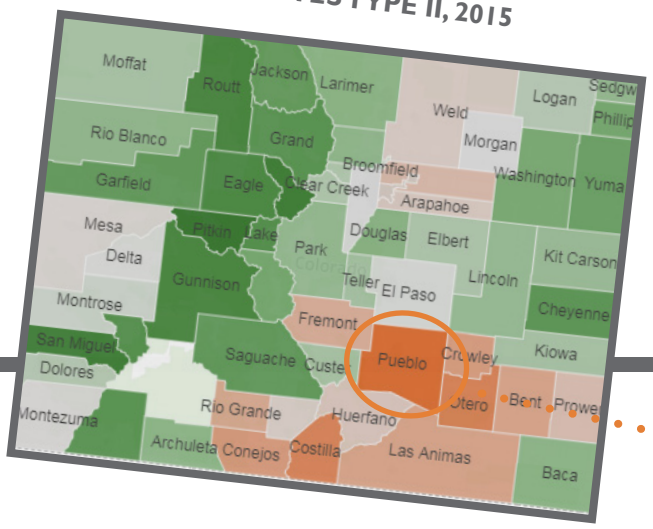


DEPRESSION, 2015



Bent County is **197% higher for depression** than statewide average

DIABETES TYPE II, 2015



Pueblo is **89% higher** than the statewide prevalence for **diabetes type II**

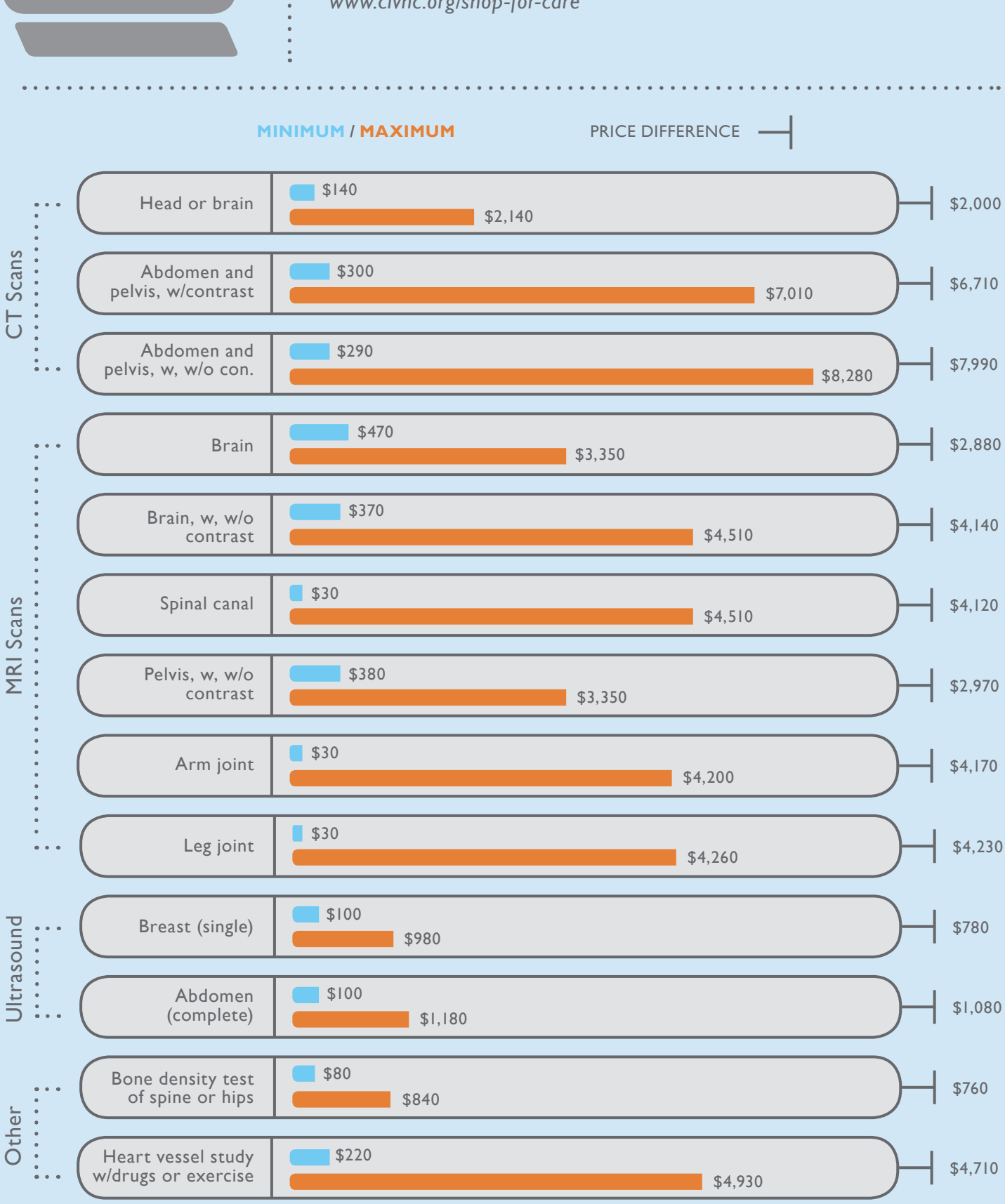
Central Mountain counties, *including* **Gunnison, Pitkin and Eagle** *have some of the* **lowest prevalence** *of most conditions including* **Hypertension, Diabetes, COPD and CHF.**

To learn more, visit us at:
www.civhc.org/get-data/interactive-data/statewide-metrics/condition-prevalence

Cost of Imaging Procedures

Facility Cost and Quality Data Release

www.civhc.org/shop-for-care



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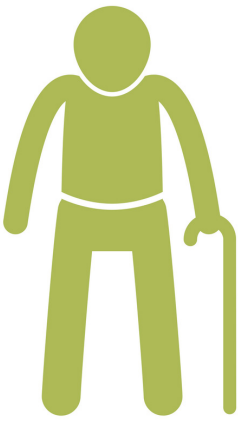
Cancer Prevalence in CO

Insights from the Colorado All Payer Claims Database interactive public reports @ www.civhc.org

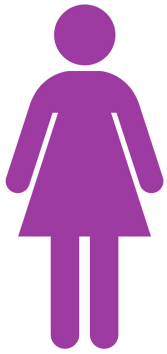
Overview

Breast cancer *is by far the cancer with the* **highest prevalence (0.79%)**, *followed by prevalence of* **cervical cancer (0.21%)**.



The **cancers** reported tend to be **more prevalent** in the **older population (65+ yrs.)**...

...with the exception of **cervical cancer**, which is **more prevalent among women (35-64 yrs.).**



Medicare Advantage

The **35-64 yrs.** population covered by **Medicare Advantage** has the **highest prevalence of all cancers** reported.*

Cancers tend to be **more prevalent in rural** counties among the **Medicare Advantage** and **Medicaid** populations.

*Populations covered by Medicare Advantage represent individuals with complex conditions and can include those under age 65.

Breast Cancer

0.79% **Overall rate** across all payers

Trends since 2012

- Commercial **-29%**
- Medicaid **-24%**
- Medicare Advantage **14%**

Urban counties have **higher** rates of breast cancer (0.8%) compared to rural (0.6%).

Colorectal Cancer

0.14% **Overall rate** across all payers

Trends since 2012

- Commercial **-8%**
- Medicaid **-13%**
- Medicare Advantage **5%**

No apparent variation between rural and urban prevalence for all payers.

Cervical Cancer

0.21% **Overall rate** across all payers

Trends since 2012

- Commercial **-16%**
- Medicaid **-17%**
- Medicare Advantage **25%**

Rural counties have **higher** rates of cervical cancer in the **Medicaid and Medicare Advantage** population.

Lung Cancer

0.09% **Overall rate** across all payers

Trends since 2012

- Commercial **-36%**
- Medicaid **-25%**
- Medicare Advantage **0%**

Overall prevalence of lung cancer tends to be **higher** in the **older population (65+).**

To learn more, visit us at:
www.civhc.org/get-data/interactive-data/statewide-metrics/condition-prevalence

This report is based on record of specific diagnoses associated to health care services billed to a third party during a calendar year, as opposed to individuals' self-reported diagnosis.

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Total Cost of Care Multi-State Analysis

Colorado's Health Care Costs Higher than Four Other States, with **Millions** in **Annual Savings Potential**

Overview

As health care costs continue to rise in Colorado and across the nation, it's essential to better understand what is driving increases in order to change our current unsustainable trajectory. There are a number of reasons why costs may vary both within one state and among several, including the health of the population, how often people are visiting a health care provider or filling prescriptions (utilization), and the price of those services. The Total Cost of Care project, funded by the Robert Wood Johnson Foundation and led by the Network for Regional Healthcare Improvement, is the first of its kind to measure those factors in a standardized way across multiple states.

This project is unique in that the results of other studies are either too broad to be actionable on the ground or too specific to be meaningful in measuring system-wide change. In addition to highlighting variation among participating states – Oregon, Utah, Colorado, Minnesota and Maryland – each state also shared practice-specific data with primary care providers enabling them to implement change that directly supports their patients.

Center for Improving Value in Health Care (CIVHC) participated in the study on behalf of Colorado using 2015 claims data from the Colorado All Payer Claims Database (CO APCD). The analysis included data from 14 commercial payers for patients attributed to 102 adult primary care practices, and 24 pediatric practices, and tracked cost and utilization across the continuum of care (Inpatient, Outpatient, Professional and Pharmacy).

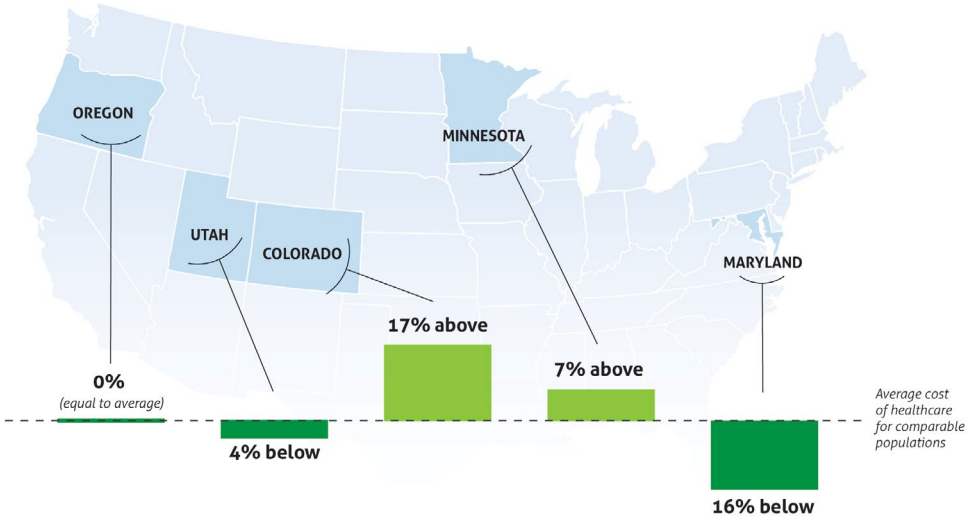
This Colorado-specific report includes findings from the multi-state *Getting to Affordability: Untangling Cost Drivers* publication comparing Colorado to the other participating states, and includes additional analysis and insights into regional cost and utilization variation highlighting opportunities within the state.

How Colorado Compares

Across the participating states, results show that pricing and utilization patterns differ significantly, driving differences in total cost to various degrees. The multi-state study found that Colorado's total costs across all service types were 17% higher when compared to the other four states included in the analysis. Colorado's total costs were driven more by higher utilization of services (11% above average) than the price of those services (6% above average), although both were a factor.

Figure 1. Multi-State Total Health Care Cost Comparison

(Source: Getting to Affordability: Untangling Cost Drivers)



Relative Cost of Healthcare

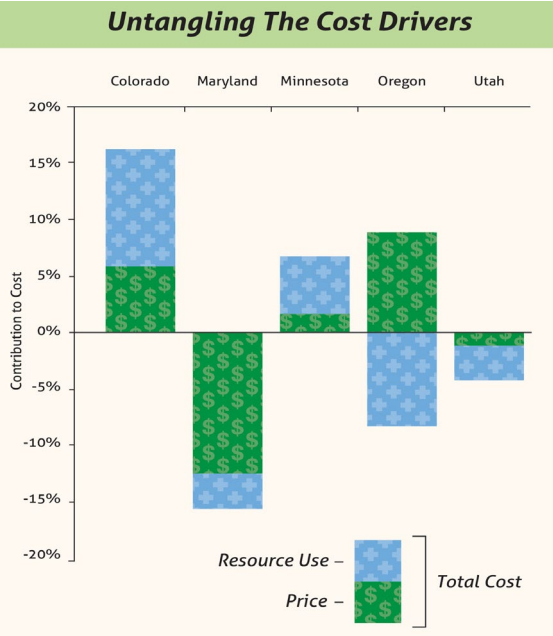
Opportunities for reducing the cost of healthcare are revealed by comparing 2015 risk-adjusted spending across participating states for private payers. Bringing the higher than average cost states highlighted above down to the average of the participating states could potentially save over $1 billion. Imagine if all the participating states could match the lowest cost state, several billion dollars would be available for other parts of the economy.

Further analysis into broad health care service categories shows that Colorado's costs were 30% higher than other states for Outpatient services, the highest percentage above the average in any category in any participating state.

Colorado's total costs were also higher than the five state average in the Inpatient (16% above average), and Pharmacy (24% above average) categories. Higher costs in Outpatient and Pharmacy appear to be driven mostly by higher utilization whereas inpatient costs were driven solely by above average prices.

Professional services was the only category where Colorado fared better than other states, although costs were still higher than two of the other four participating states.

Figure 2: State Comparison of Drivers of Total Cost (Source: Getting to Affordability: Untangling Cost Drivers)



The size of the bars represents the impact of price and resource use on the total cost. As seen in the graphic, price and resource use played different roles in the variation of total cost by state.

Table 1: State Comparison by Service Category (Source: Getting to Affordability: Untangling Cost Drivers)

Total Cost of Care by Service Category
Commercial Population 2015
Combined Attributed and Unattributed

Measure	Colorado	Maryland	Minnesota	Oregon	Utah
Total Cost					
Overall	17%	-16%	7%	0%	-4%
Inpatient	16%	-18%	7%	0%	-1%
Outpatient	30%	-30%	0%	-7%	17%
Professional	5%	-18%	21%	12%	-17%
Pharmacy	24%	7%	-11%	-12%	-8%
Resource Use					
Overall	11%	-3%	5%	-8%	-3%
Inpatient	0%	-7%	8%	-14%	16%
Outpatient	25%	-19%	5%	-16%	13%
Professional	3%	2%	10%	-3%	-13%
Pharmacy	23%	6%	-9%	-10%	-9%
Price					
Overall	6%	-13%	1%	9%	-1%
Inpatient	16%	-12%	-1%	16%	-14%
Outpatient	4%	-13%	-5%	11%	4%
Professional	2%	-20%	10%	15%	-5%
Pharmacy	0%	1%	-2%	-2%	2%

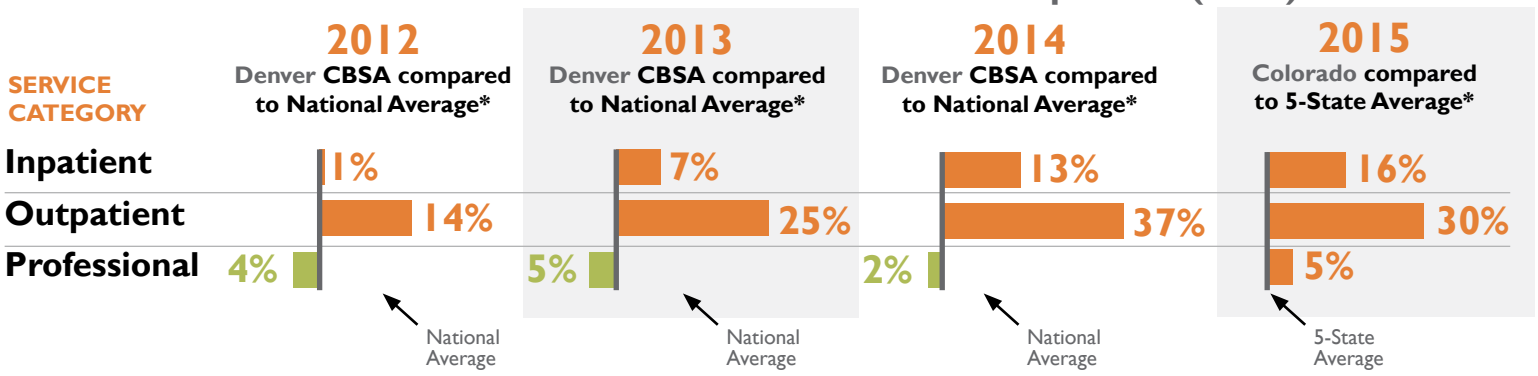
Note: This is the midpoint of the ranges created from the sensitivity analysis and represents the percent above or below the risk adjusted average across all regions. For more details, view Getting to Affordability: Untangling Cost Drivers, pg. 19.

How This Study Compares

How These Results Compare to Similar Analyses

In 2017, the Health Care Cost Institute (HCCI) published Healthy Marketplace Index (HMI) information reflecting analysis of employer-sponsored claims data from Aetna, Humana, Kaiser and United in all 50 states. The HMI includes measures of prices, utilization and market concentration in Core Based Statistical Areas (CBSAs) – generally representing large metropolitan areas across the United States. Results for the Denver-Aurora-Lakewood CBSA from 2012-2014 show price index values trending upward across all three service categories, with 2014 numbers very comparable to CO APCD data derived using the National Quality Forum-endorsed Health Partners methodology in the Total Cost of Care project.

Table 2. HCCI Price Index for Denver-Aurora-Lakewood CBSA (2012-2014) vs. CO APCD Total Cost of Care Five-State Price Comparison (2015)



Source: Health Care Cost Institute Healthy Marketplace Index, Denver-Aurora-Lakewood Core Based Statistical Area (CBSA)

***Source: Colorado All Payer Claims Database statewide data, Getting to Affordability: Untangling Cost Drivers*

The CO APCD data is more recent, includes more of the Colorado population, and covers the entire state when compared to the HMI analysis. Regardless, the results of both studies indicate consistent opportunities for improvement in Colorado.

Opportunities for Savings in CO

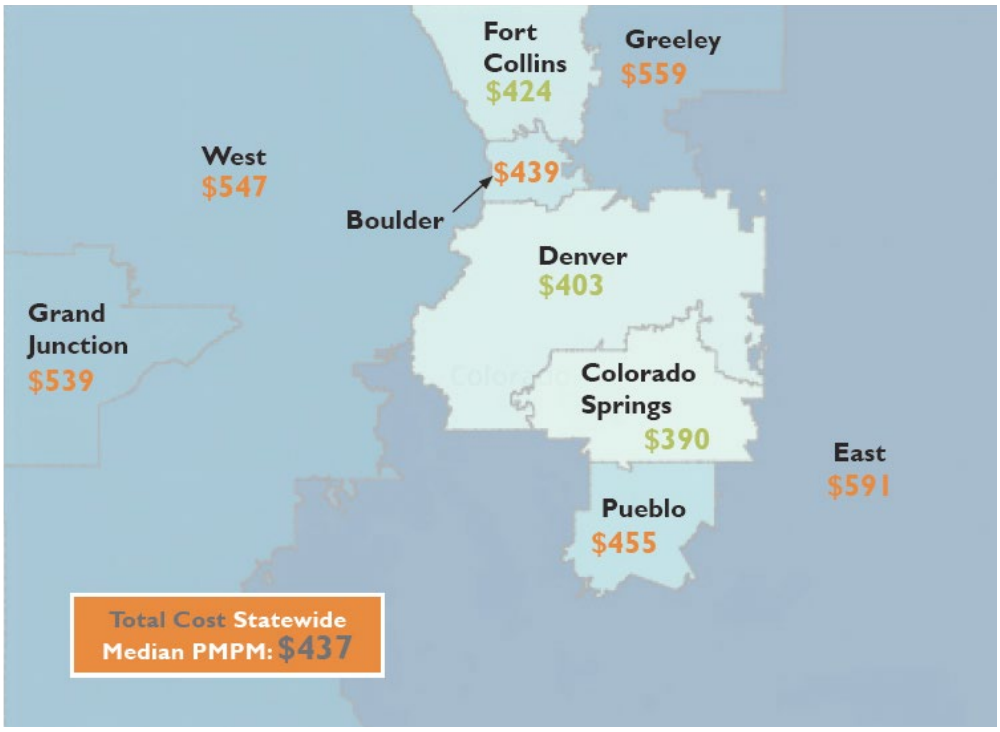
When evaluating total costs across the commercially insured patients at the 102 Colorado adult primary care practices included in the Colorado analysis, data indicates that if practices with above average costs reduced per member per month (PMPM) spending to the average across all practices ($437 PMPM), **Colorado could save up to $48 million in health care spending per year.** This potential savings could be even greater if it was spread across all patients and practices in Colorado, and would be even more significant if practices in Colorado matched more closely with the average total cost across all five states.

Regional Variation in CO

To achieve cost savings in Colorado, it is important to understand where the biggest opportunities are for change. Looking at variation in spending across Colorado Division of Insurance (DOI) geographic rate setting regions helps isolate areas of potential focus. Within Colorado, total costs across all services varied substantially by region and ranged from $390-$591 PMPM across practices analyzed.

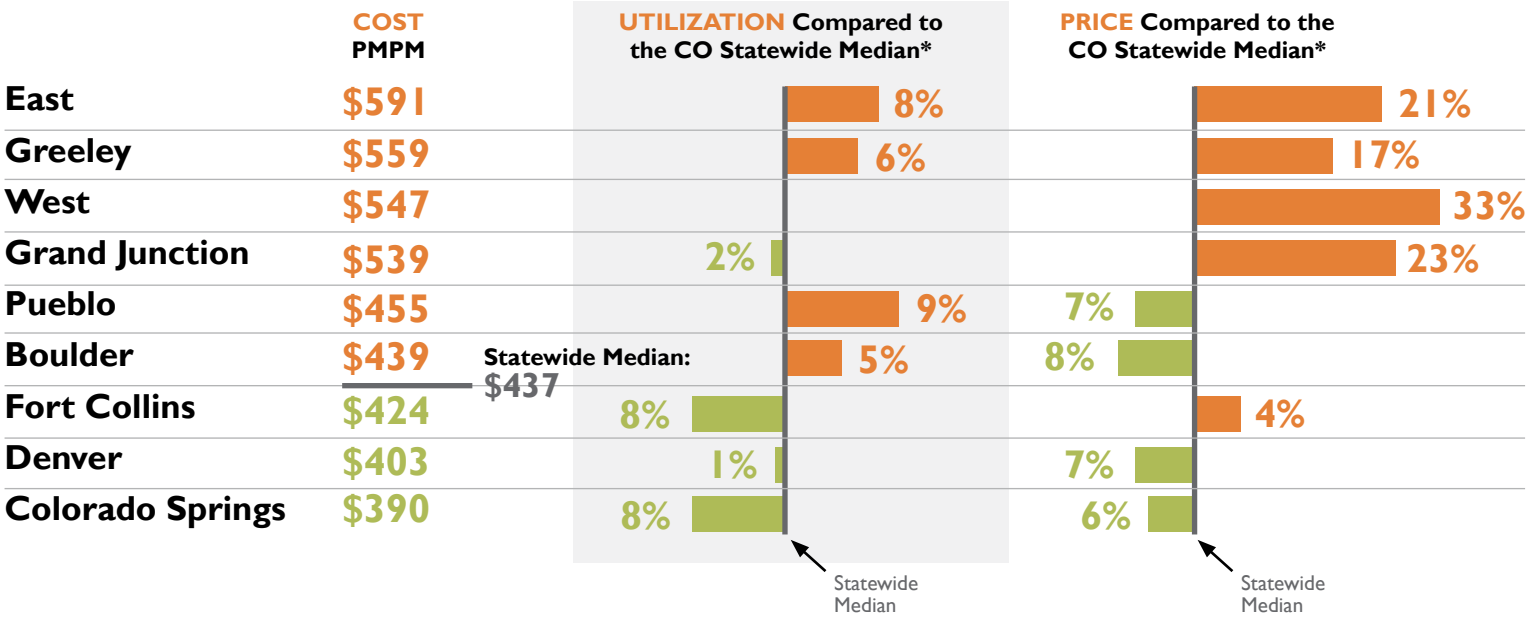
Six regions in Colorado had higher PMPM costs than the statewide average. The East and Greeley regions had the two highest risk-adjusted PMPM costs in the state, driven by both higher utilization and higher prices. Grand Junction and the West regions had the third and fourth highest total costs respectively, primarily driven by higher prices, as utilization in those areas was either lower than or nearly equal to the statewide average.

Figure 3: Colorado Total (Inpatient, Outpatient, Professional, Pharmacy) Median Risk-Adjusted Per Member Per Month (PMPM) Cost by CO Division of Insurance Region



Statewide medians only reflect results for the 102 adult primary care practices included in the 2015 Colorado All Payer Claims Database study

Table 3. Total (Inpatient, Outpatient, Professional, Pharmacy) Median Risk-Adjusted Per Member Per Month (PMPM) Cost by CO Division of Insurance Region

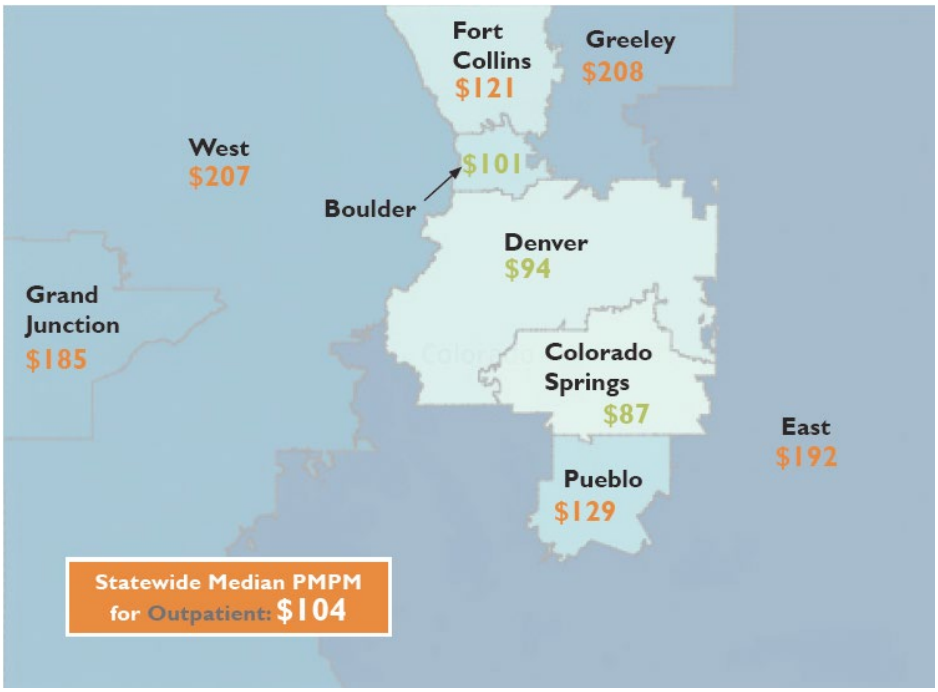


Statewide medians only reflect results for the 102 adult primary care practices included in the 2015 Colorado All Payer Claims Database study

As noted in the multi-state comparison section above, Colorado had significantly higher total costs for outpatient services (defined as procedures provided in a facility setting, generally a hospital, outpatient facility or ambulatory surgery center), 30% above the benchmark of other participating states.

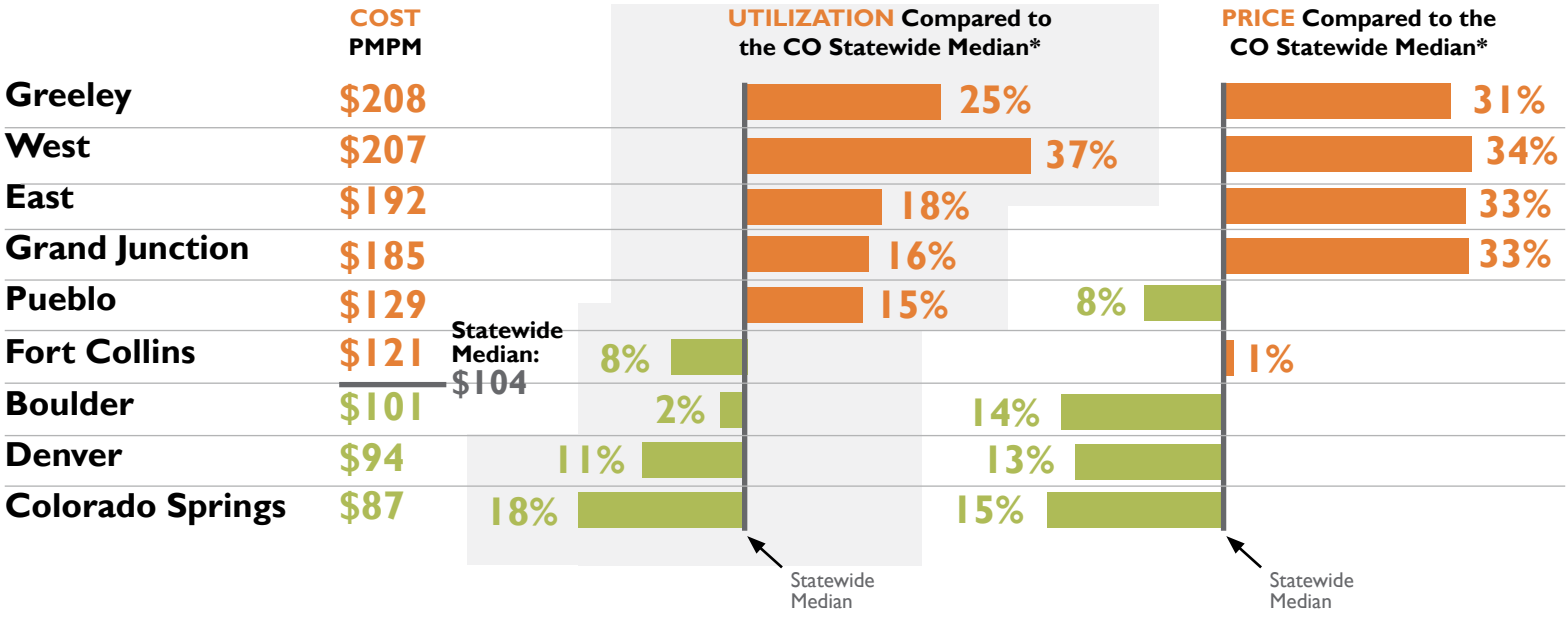
Outpatient costs across DOI regions in Colorado range between $87-$208 PMPM. All regions except for Boulder, Denver, and Colorado Springs were above the statewide median ($104 PMPM). Greeley, West, East and Grand Junction regions were top four for highest outpatient costs, driven by both higher than average utilization and higher than average prices in those areas.

Figure 4: Colorado Outpatient Median Risk-Adjusted Per Member Per Month (PMPM) Cost by Colorado Division of Insurance Region



Statewide medians only reflect results for the 102 adult primary care practices included in the 2015 Colorado All Payer Claims Database study

Table 4. Outpatient Median Risk-Adjusted Per Member Per Month (PMPM) Cost by Colorado Division of Insurance Region

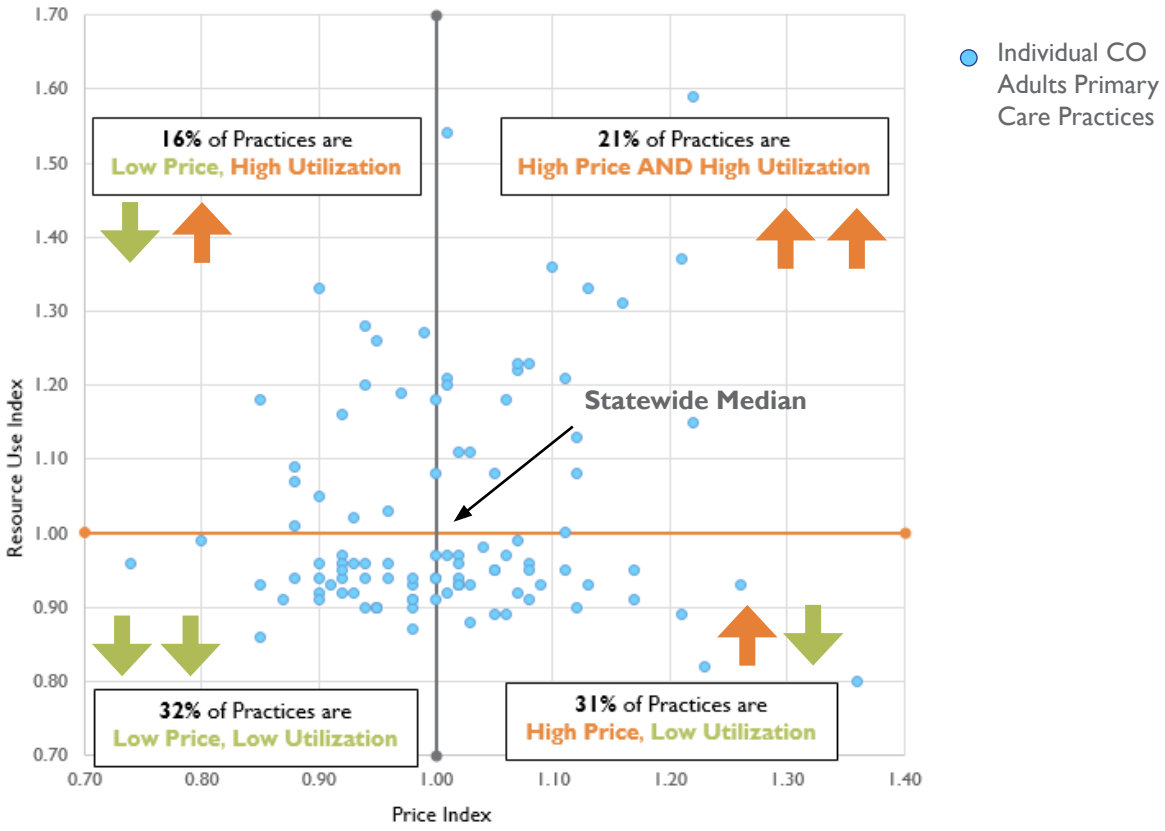


Statewide medians only reflect results for the 102 adult primary care practices included in the 2015 Colorado All Payer Claims Database study

Provider Group Variation

In addition to participating in the multi-state benchmark analysis, as part of this project, CIVHC also provided detailed pratice-level reports to the 102 adult primary care physician practices and 24 pediatric practices (not represented in the figures and tables shown in this report) included in the Colorado analysis. Figure 5 shows how risk-adjusted prices and utilization for patients attributed to each of the 102 adult primary care practices in the study compared to the statewide average. In Colorado, 32% of practices are in the ideal low price, low utilization category in providing care for their patients, leaving opportunities for improvement at 68% of the practices evaluated.

Figure 5: Colorado Provider Practice Utilization and Price Comparison



**CO All Payer Claims data represents 102 adult primary care practices included in the Total Cost of Care Project*

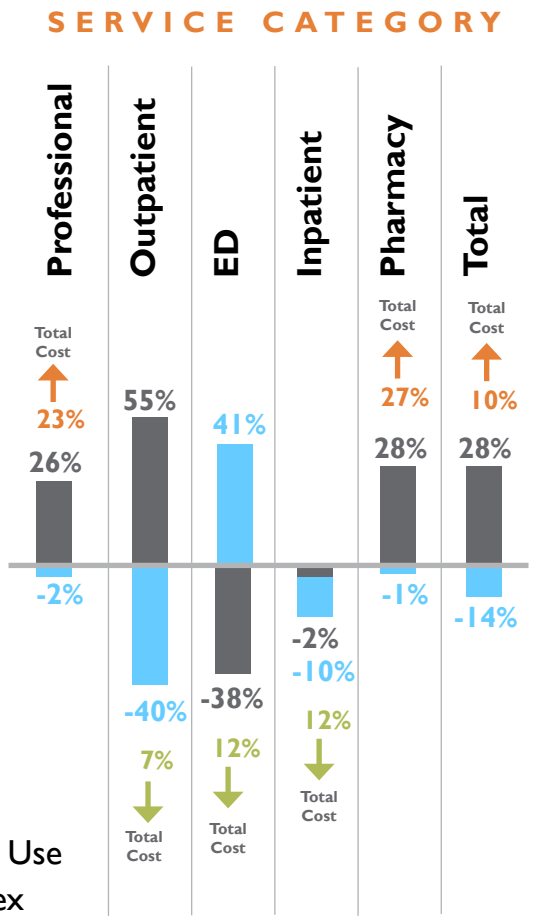
Practice Level Detail

In order for this information to be actionable to providers, it has to indicate both high-level and specific areas of opportunity to reduce total costs. For example, in Figure 6, data provided to one practice shows that their total Professional costs were 23% higher than average, driven by 26% higher utilization. Total costs for Outpatient services at this practice were 7% lower than average, despite 55% higher utilization because prices for those services were 40% below average. The practice can also see that their patients are less healthy with a 35% higher "risk score" compared to the state average.

Figure 6. Example Summary Data Provided to CO Primary Care Practices

SERVICE CATEGORY	AVERAGE PMPM	PRACTICE PMPM
Professional	$160	$197
Outpatient	$131	$121
ED	$18	$15
Inpatient	$72	$63
Pharmacy	$113	$144
Total	$475	$524

Average Risk Score	1.00
Practice Risk Score	1.35 (↑ 35%)



Reference-Based Inpatient and Outpatient Payment Analysis:

Reducing Payment Variation as a Potential Cost-Savings Mechanism

November 2018

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

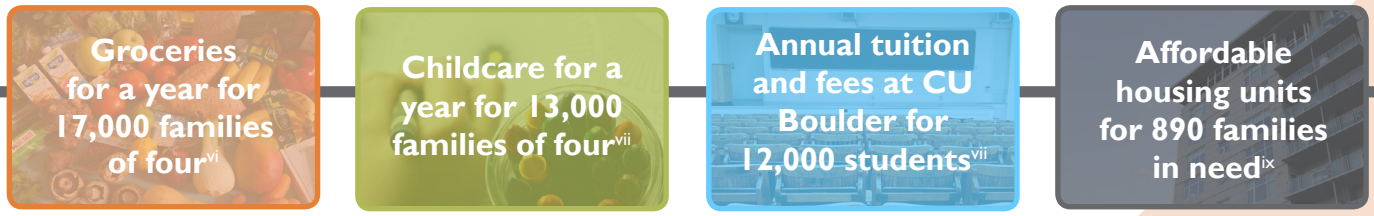
	2012 Average % Medicare*	2016 Average % Medicare*	Percentage Point Increase 2012-2016
Inpatient Services (top 12 by volume/price)	250% (range 210%-300%**)	290% (range 260%-330%**)	↑ 40
Outpatient Services (top 10 by volume/price)	440% (range 210%-1,160%**)	520% (range 250%-1,150%**)	↑ 80

* 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

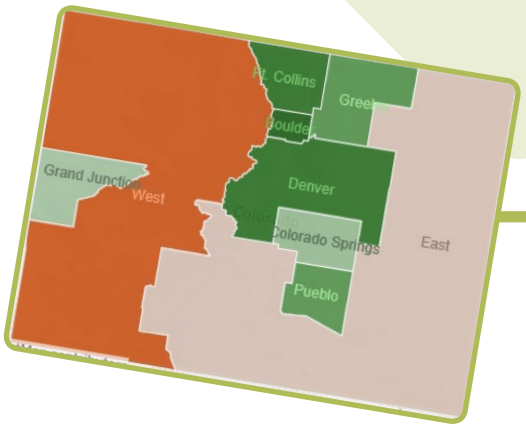
Wide variation in prices and percentage of Medicare exists at the statewide level as well as geographically across the Division of Insurance (DOI) regions in the state. This analysis, similar to others conducted with CO APCD data, shows that regional price variation cannot be explained solely based on 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%

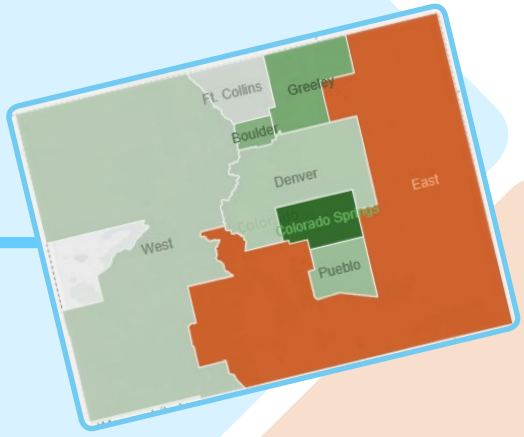
1.6 x Difference



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%

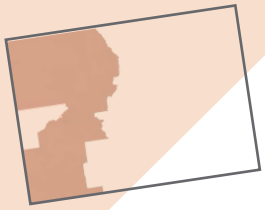
2.1 x Difference



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.**

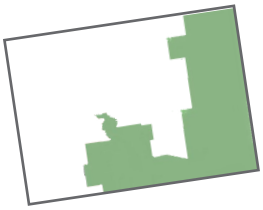
Regional Cost Savings Opportunities

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.



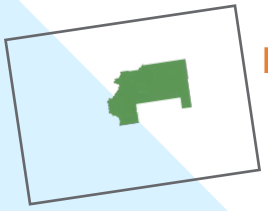
Regional Cost Savings Analysis, Inpatient
West DOI Region, Commercial Payers, 2016, CO APCD

	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

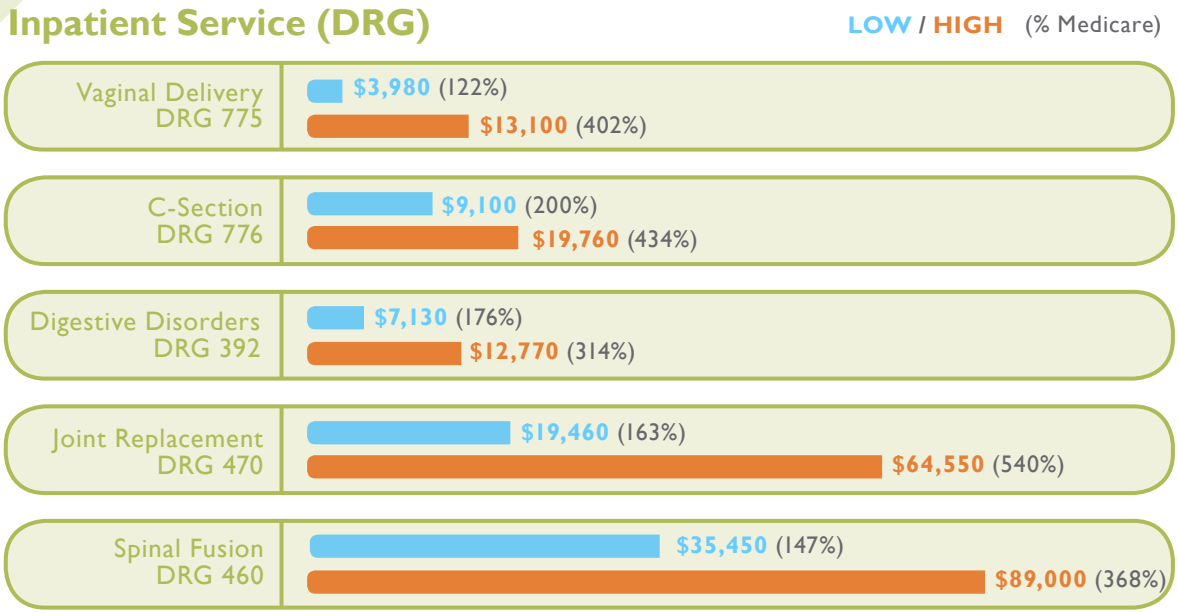
	Total Denver DOI Current Spend	Median Price (potential savings*)	200% Medicare (potential savings**)	150% Medicare (potential savings**)
Inpatient Services (top 12 by volume/price)	$156 million	$16 million	$45 million	$72 million
Outpatient Services (top 10 by volume/price)	$29 million	$8 million	$18 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.

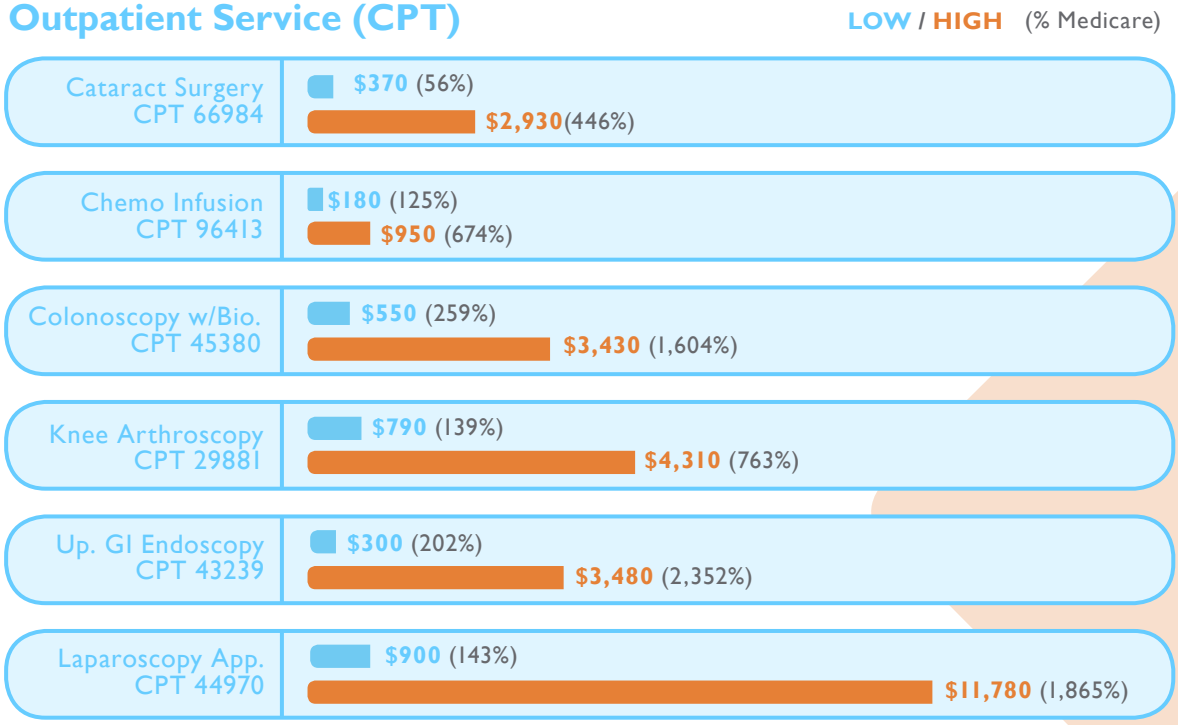
Facility Variation & Trends

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.

Funding support for this analysis was made possible through the Colorado Business Group on Health and the CO APCD Scholarship fund administered by the Department of Health Care Policy and Finance.

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.

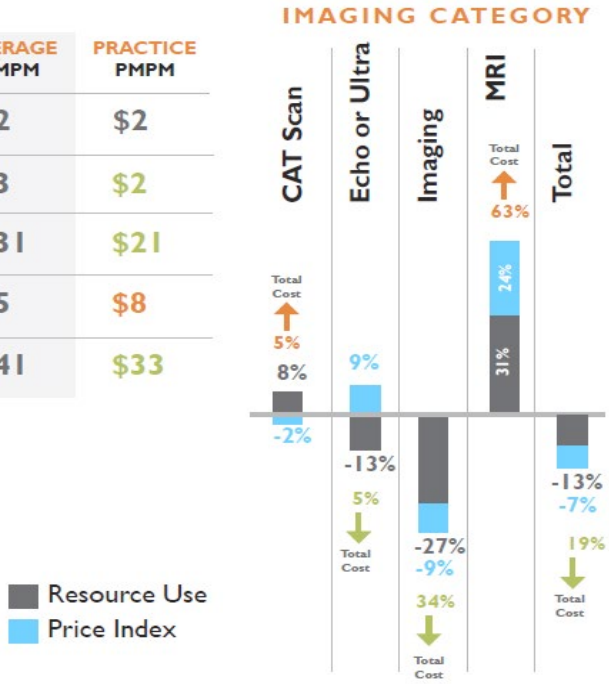
[v] The Pilot. (2018, October 4). State Health Plan Launches New Provider Reimbursement Effort. ThePilot.com. Retrieved October 2018, from http://www.thepilot.com/business/state-health-plan-launches-new-provider-reimbursement-effort/article_1a31dbf6-c7f3-11e8-bb85-6bdba81c9f16.html

[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

Figure 7. Example Radiology Service-level Detail, Colorado Practice Report

IMAGING CATEGORY	AVERAGE PMPM	PRACTICE PMPM
CAT Scan	$2	$2
Echo or Ultra	$3	$2
Imaging	$31	$21
MRI	$5	$8
Total	$41	$33



Further detail in Figure 7 shows patients receiving MRIs at this practice experience 63% higher total costs than average, driven by higher utilization and price. Equipped with this data, this practice could consider evaluating where patients are going for MRI services to ensure that they are referring patients to the highest value (low price and high quality) providers possible.

While the reasons for higher than average results in the inpatient, outpatient, professional and pharmacy service categories cannot always be directly addressed by primary care providers, this data can help them understand specific opportunities to reduce total costs to be successful under value-based payment models. Additionally, this information can help them make better informed decisions regarding patient referrals and in designing targeted patient education programs.

Looking Forward

Most Coloradans and policy makers are well aware that the cost of health care is a problem for the state with wide variation in health care premiums in different regions and year after year premium increases. However, until now, it hasn't been clear whether high utilization, high prices or both are driving up costs, and there hasn't been a standard way to evaluate how Colorado costs for services compare to other parts of the country. The results of the multi-state analysis can help Colorado identify where costs are out of sync with other states and isolate the drivers. These comparisons also offer insights into how our marketplace differs from other lower-cost lower-utilization areas, offering potential alternatives to our model.

The more granular Colorado regional variation information and provider reports can also be used to identify cost savings opportunities by various stakeholders including:

- **Primary Care Providers** participating in pay-for-value programs where they are responsible for care beyond their walls. This data, for the first time, enables them to see utilization and spending patterns outside their offices compared to their peers, giving them insights regarding the most high-value referral options.
- **Policymakers** looking to better understand drivers of Colorado's relatively high total cost of care, the causes of variation across different regions of the state, and what might be done to better control costs.
- **Employers and Health Plans** looking for ways to align benefit designs to help patients make high value health care decisions and select high value health providers.
- **Consumers** looking for information on where to receive high value care.

In the coming years, CIVHC will add nationally endorsed quality measures to the practice-level reports, enabling a variety of stakeholders to evaluate performance on both total cost and quality of care. CIVHC also plans to work with providers to make some of the information contained in the practice-level analysis available on the CO APCD public website. An important first step towards practice-level quality reporting are the publicly available quality measures interactive reports on CIVHC's website. Also currently available are interactive cost of care reports and utilization reports that show trends in costs and utilization across Colorado across the Medicaid, Medicare Advantage and Commercially insured population.

Methodology

The Colorado-specific analysis was performed by Center for Improving Value in Health Care based on the HealthPartners Total Cost of Care measures. Detailed and in-depth information regarding the measures is available in the TCOC Toolkit. Details regarding development of the results summarized in this report can be found in the Technical Appendix to the Getting to Affordability: Untangling Cost Drivers report.

Colorado data was generated using 2015 claims data from 14 commercial payers included in the Colorado All Payer Claims Database. In order to compare Colorado with other participating states, the analysis was limited to evaluating patients attributed to 102 adult primary care practices, and 24 pediatric practices. For more information about the Total Cost of Care project, visit www.civhc.org, or contact us at info@civhc.org.

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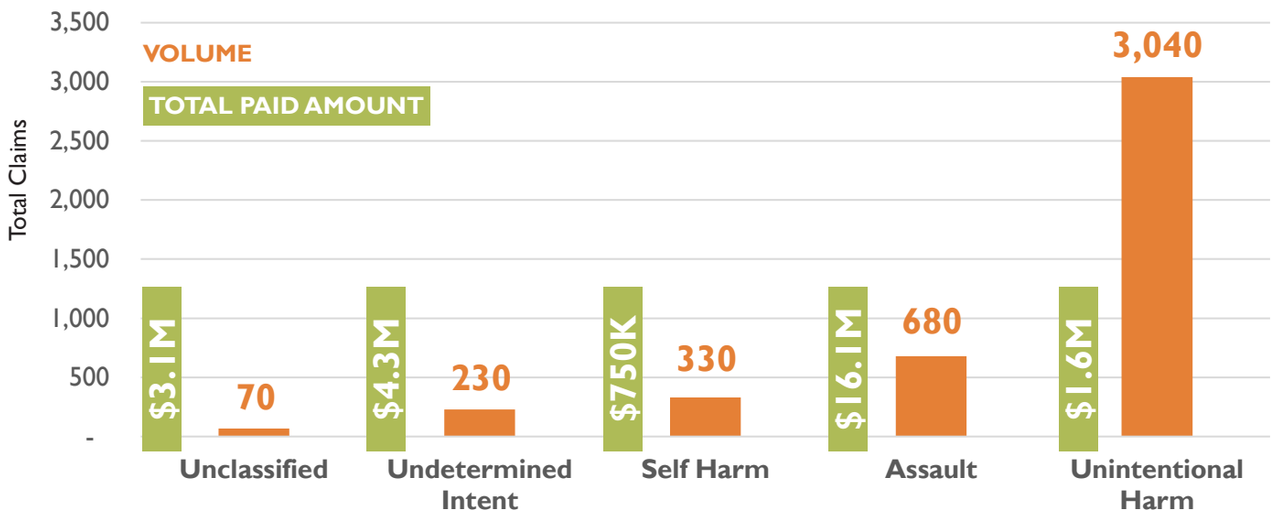
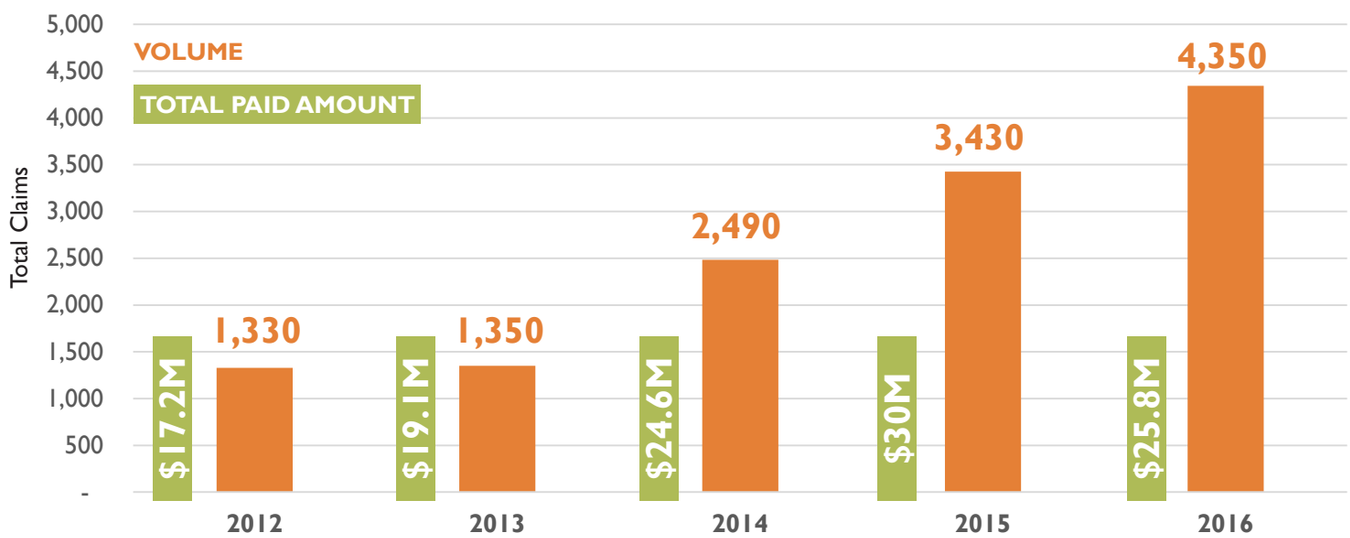
CO APCD DATA BYTE: FIREARM INJURY TRENDS AND COSTS IN COLORADO

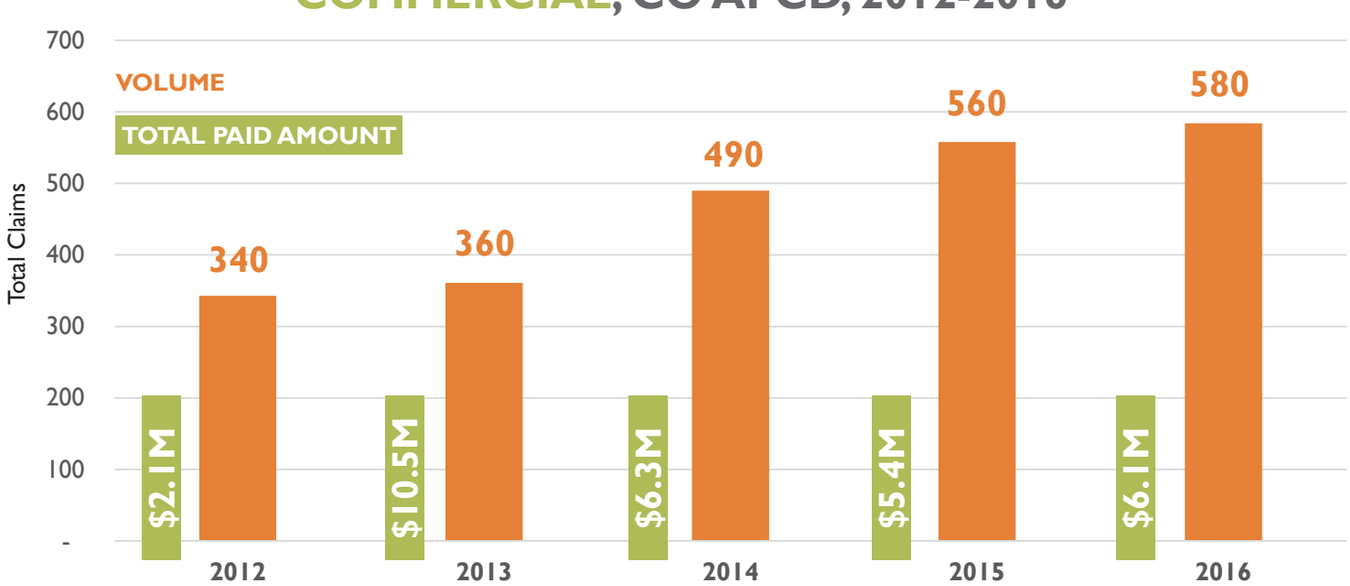
FIREARM CLAIMS BY INJURY TYPE, COMMERCIAL, MEDICAID, MEDICARE FFS, MEDICARE ADVANTAGE, CO APCD, 2016



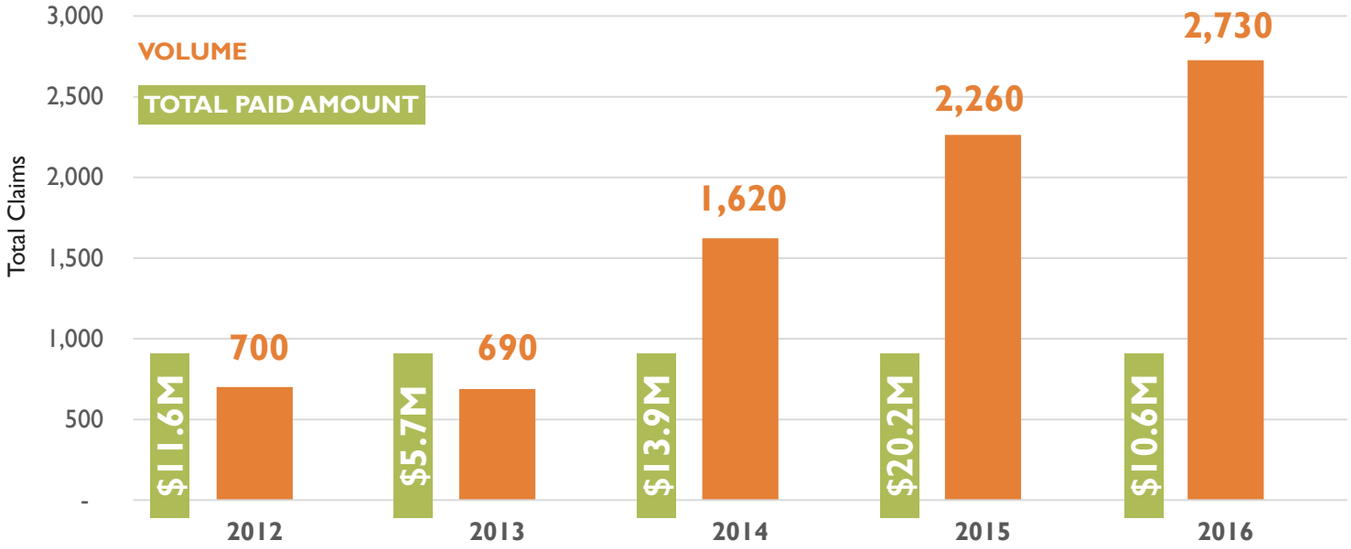
FIREARM INJURY TRENDS AND TOTAL COSTS, COMMERCIAL, MEDICAID, MEDICARE FFS, MEDICARE ADVANTAGE, CO APCD, 2012- 2016



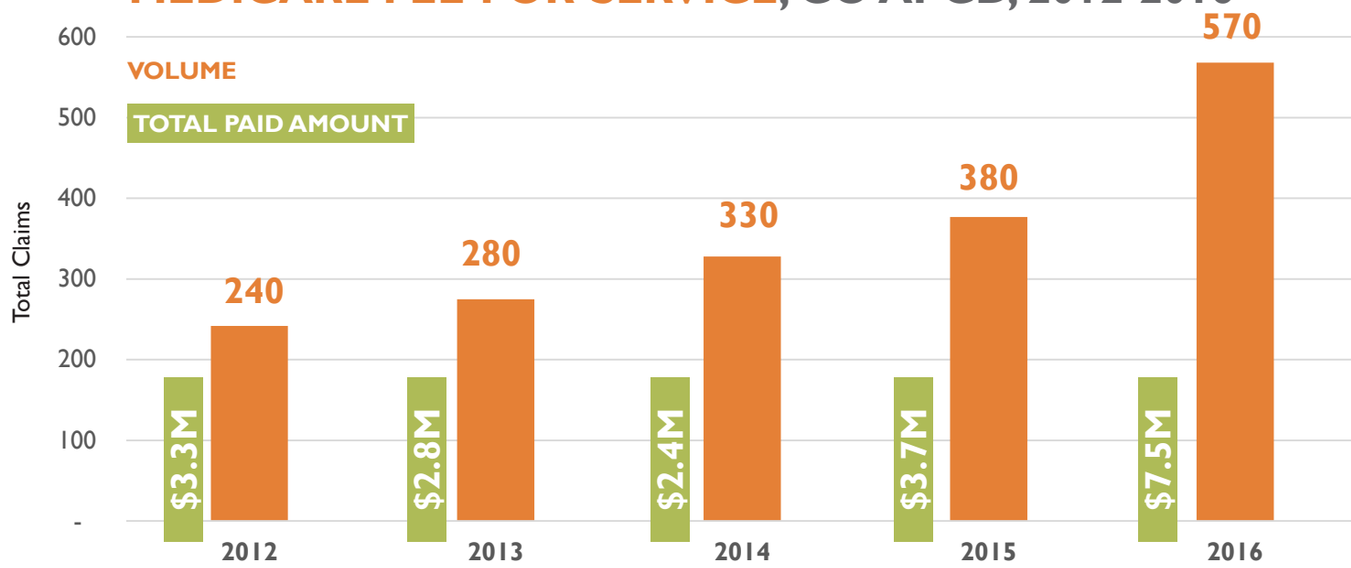
FIREARM INJURY TRENDS AND TOTAL COSTS COMMERCIAL, CO APCD, 2012-2016



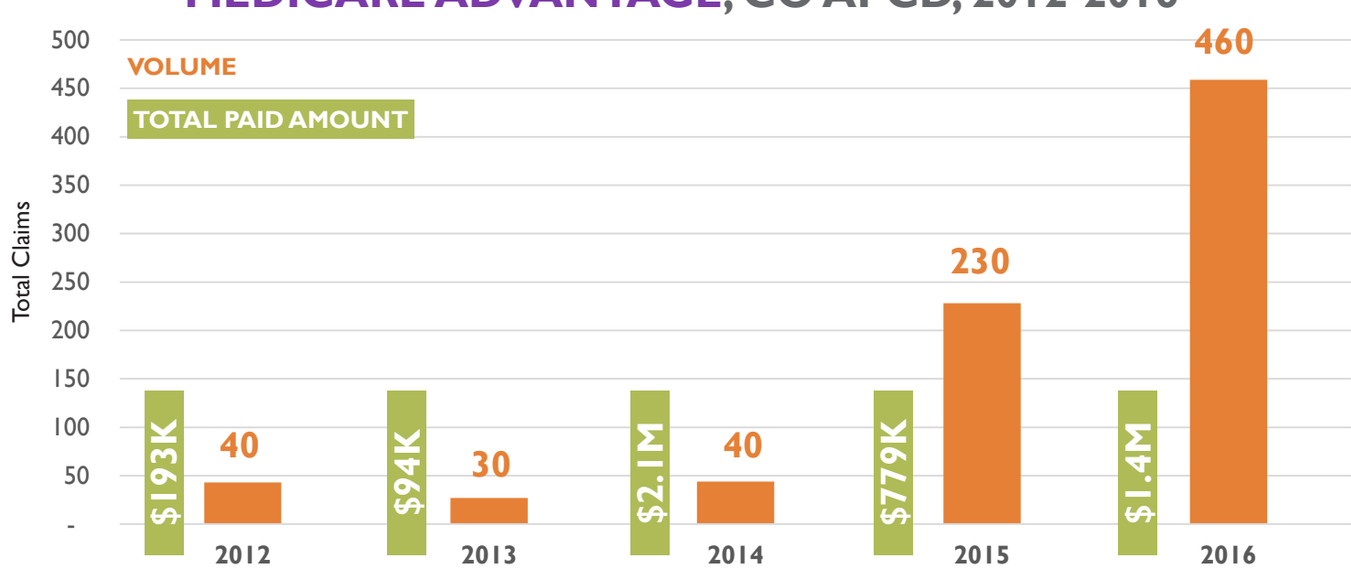
FIREARM INJURY TRENDS AND TOTAL COSTS
MEDICAID, CO APCD, 2012-2016



FIREARM INJURY TRENDS AND TOTAL COSTS
MEDICARE FEE-FOR-SERVICE, CO APCD, 2012-2016



FIREARM INJURY TRENDS AND TOTAL COSTS
MEDICARE ADVANTAGE, CO APCD, 2012-2016



2012-2016 results for this analysis based on ICD9I10 codes X93xx, X94xx, X95xx, E96xx, X72xx, X73xx, X74xx, E95xx,W32xx,W33xx, W34xx,Y22xx,Y23xx,Y24xx, E97xx, E98xx, and E92xx contained in the Colorado All Payer Claims Database (CO APCD). Exclusions include diagnosis codes with the words "air,""paint,""nail," and "virus." The transition from ICD 9 to ICD 10 billing took effect in October 2015 and may contribute to the increase in volume related to firearms in 2015 and 2016. Data was not adjusted to account for the number of people in the CO APCD which has increased since 2012. Additionally, total claims volume includes any instance where billing included a firearm code, regardless of the person receiving it, therefore numbers may represent multiple instances where one person received ongoing care for an injury.

Data Byte: Top 25 CPTs by Volume in CO

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Top 25 Average and Median Allowed (Paid) and Charged Amounts by Professional CPT Payments, 2016 Commercial Claims, CO All Payer Claims Database

CPT	Average Charge/Service	Average Paid Amount/Service	Average Paid Amount as % of Charge	Median Charge/Service	Median Paid Amount/Service	Median Paid Amount as % of Charge
99214 Office/Outpatient Visit Est	$189	$120	63%	$184	$126	68%
99213 Office/Outpatient Visit Est	$122	$82	67%	$119	$86	72%
99396 Prev Visit Est Age 40-64	$215	$159	74%	$206	$158	77%
99285 Emergency Dept Visit	$716	$361	50%	$685	$306	45%
01967 Anesth/Analg Vag Delivery	$1,573	$895	57%	$403	$228	57%
99203 Office/Outpatient Visit New	$198	$129	65%	$191	$132	69%
99215 Office/Outpatient Visit Est	$299	$182	61%	$280	$182	65%
88305 Tissue Exam by Pathologist	$174	$85	49%	$145	$61	42%
99395 Prev Visit Est Age 18-39	$199	$144	72%	$192	$143	74%
00840 Anesth Surg Lower Abdomen	$1,038	$589	57%	$325	$180	55%
00810 Anesth Low Intestine Scope	$602	$342	57%	$463	$266	57%
90460 IM Admin 1st/Only Component	$55	$40	73%	$41	$31	76%
90471 Immunization Admin	$39	$28	72%	$39	$29	74%
00670 Anesth Spine Cord Surgery	$2,151	$1,132	53%	$200	$105	53%
00790 Anesth Surg Upper Abdomen	$1,235	$681	55%	$389	$210	54%
97110 Therapeutic Exercises	$60	$28	47%	$56	$27	48%
01402 Anesth Knee Arthroplasty	$1,178	$623	53%	$56	$48	86%
95165 Antigen Therapy Services	$207	$139	67%	$24	$16	67%
90461 IM Admin Each Addl Component	$42	$25	60%	$27	$17	63%
97140 Manual Therapy 1/> Regions	$59	$24	41%	$53	$23	43%
95004 Percut Allergy Skin Tests	$112	$81	72%	$11	$8	73%
77052 Comp Screen Mammogram Add-On	$17	$9	53%	$11	$6	55%
36415 Routine Venipuncture	$15	$5	33%	$15	$3	20%
85025 Complete CBC w/Auto Diff WBC	$24	$10	42%	$20	$9	45%
81002 Urinalysis Nonauto w/o Scope	$11	$3	27%	$10	$2	20%

Data reflects paid amounts and charges for the top 25 Professional Current Procedural Terminology (CPT) codes by volume in 2016, submitted through claims from 33 commercial payers to the Colorado All Payer Claims Database (CO APCD). This analysis includes both in and out-of-network payments (approximately 95% of payments are in-network in Colorado), and includes CPTs with and without modifiers.

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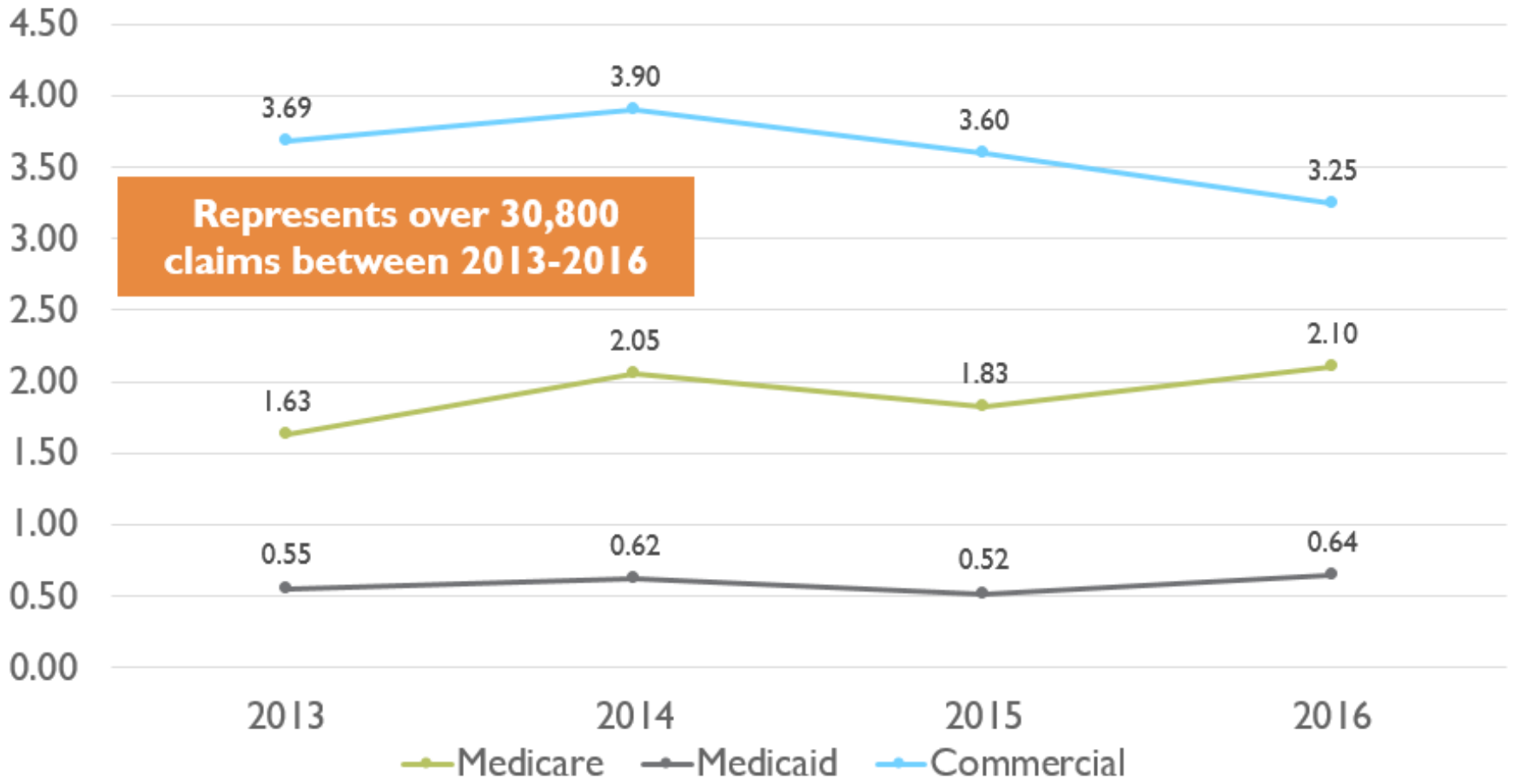
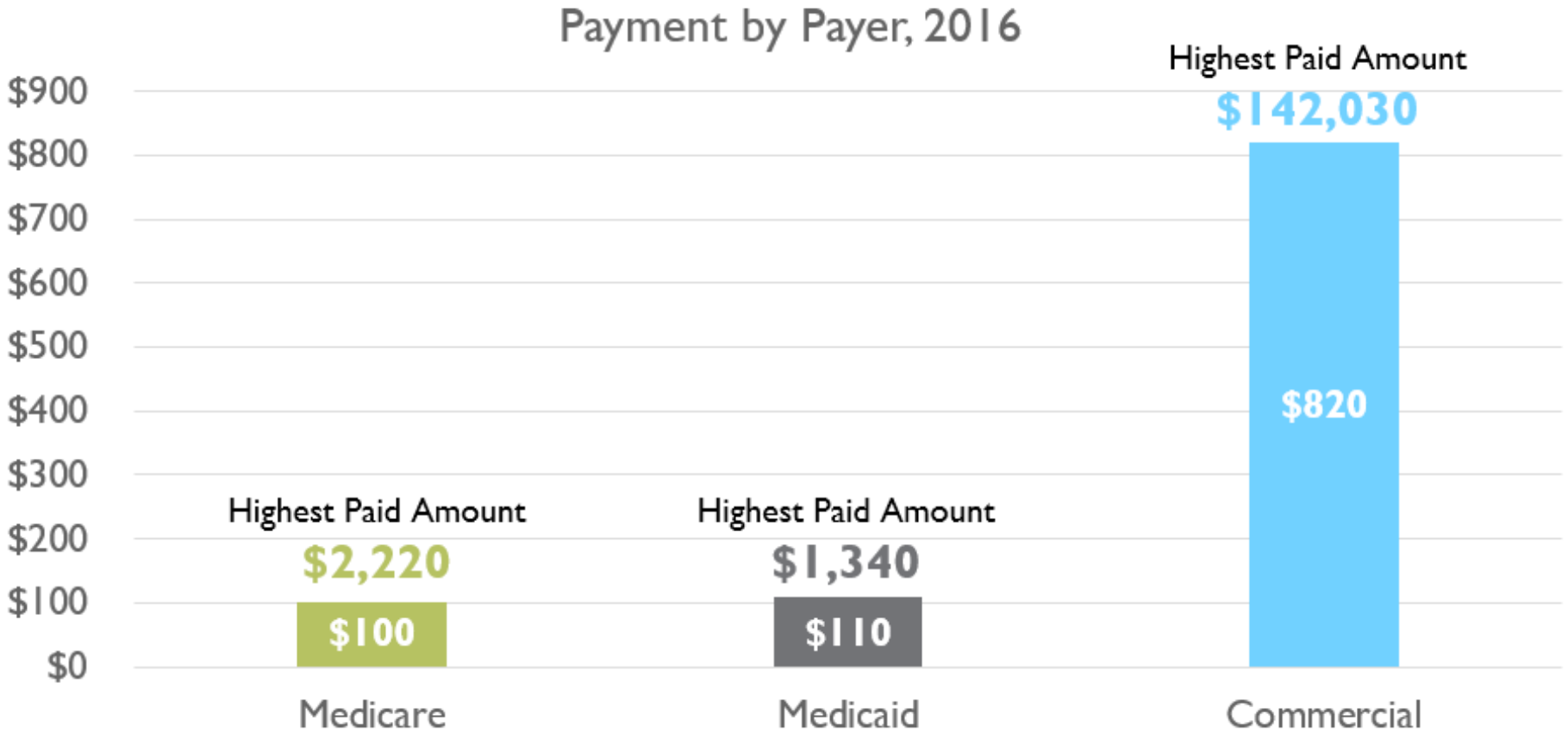
DATA BYTE: Intraoperative Neuromonitoring

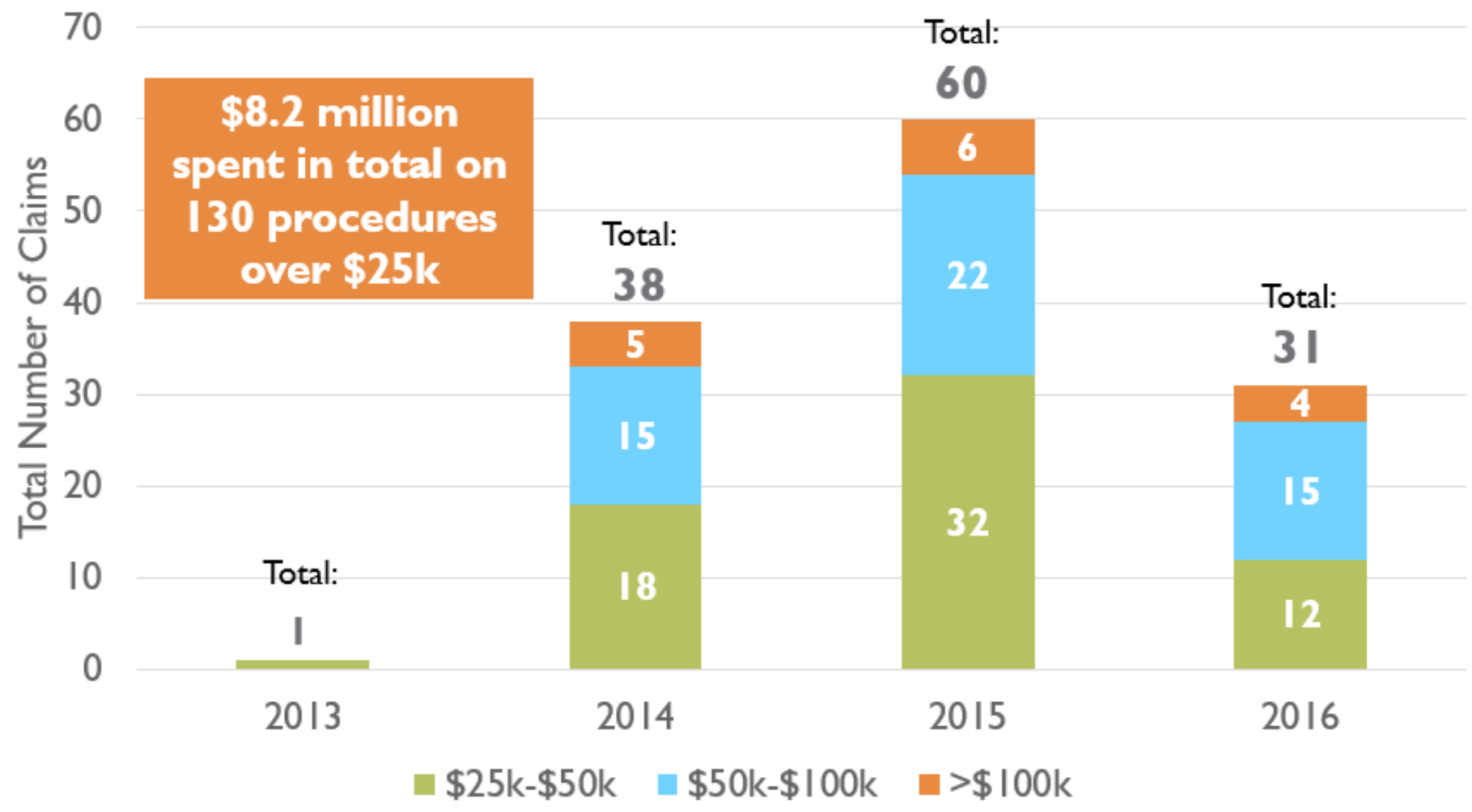
Intraoperative Neuromonitoring
Rates per 10,000 Professional Claims, 2013-2016



Intraoperative Neuromonitoring
Median Payment and Maximum (Highest) Payment by Payer, 2016



Intraoperative Neuromonitoring
Commercial Payments over $25,000, 2013-2016



Data represents analysis of claims in the Colorado All Payer Claims Database (CO APCD) from 2013-2016 for Intraoperative Neurophysiology Monitoring (CPT 4 95941, 95940; HCPCS G0453), which monitors a patient's nervous system while they are under anesthesia for certain surgical procedures. Medicare data represents both Medicare Fee-for-Service and Medicare Advantage claims. Median and highest paid amount calculations reflect claims with a non-$0 payment and include both the payer and member liability portion. Note: In many instances, the paid amount per claim was $0 indicating payers did not reimburse for this service.