

Driving Toward the Triple Aim

Colorado All Payer Claims Database 2015 Annual Report



Lower Costs



Better Care



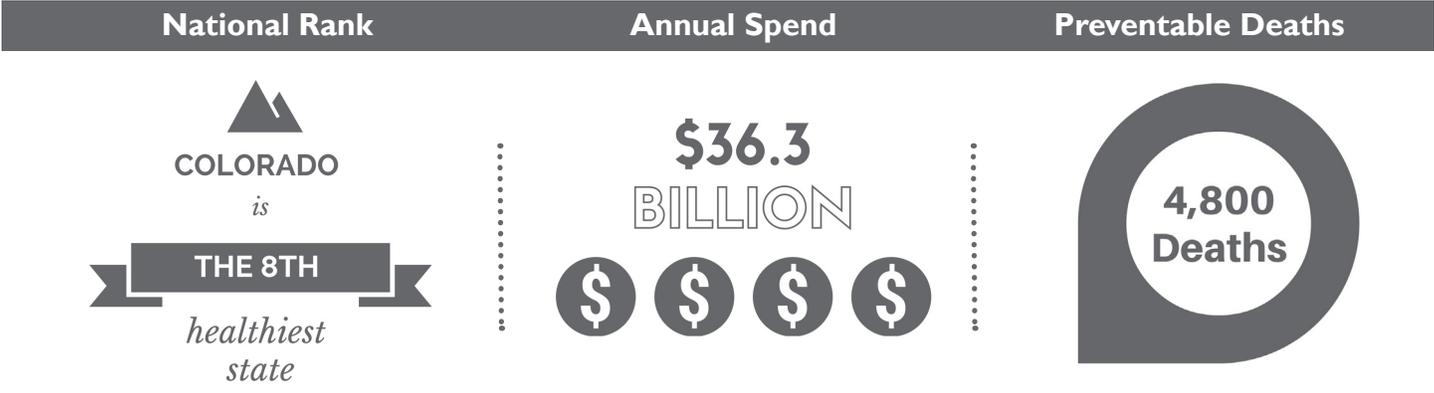
Healthier Colorado



CENTER FOR IMPROVING
VALUE IN HEALTH CARE

CO APCD 2015 Annual Report

Present Location



Colorado is the 8th healthiest state in the nation, yet nearly 4,800 deaths per year could be avoided if all Coloradans had equal opportunities for health.^{1,2} In the struggle to stay healthy, Coloradans spend approximately \$36.3 billion on personal health care annually.³ Increases in health care spending year after year are taking a toll on individuals and families and impacting Colorado's economy.

We Can Do Better.

Many public and private entities in Colorado are working to change the state's health system trajectory. The Triple Aim framework of better care, better health, and lower costs, developed by the Institute for Health Care Improvement in 2007, has become a collective goal for many stakeholders and organizations.⁴

This report explores Colorado's journey toward the Triple Aim and uses data from the Colorado All Payer Claims Database (CO APCD) to identify opportunities for improvement. A one-of-a-kind resource, CO APCD data helps drive value into the system by illuminating pathways toward lower costs, better care, and a healthier Colorado.

What's Inside?



Unless otherwise noted, the data used in this report reflects 2009-2012 claims from commercial payers and Medicaid, and was available at comedprice.org at the time of publication. Analyses do not include self-funded commercial insurance claims data or claims for patients 65 and over.

CIVHC and the CO APCD

The Journey So Far

A non-partisan, non-for-profit organization representing the perspectives of varied health care stakeholders, the Center for Improving Value in Health Care (CIVHC) mission is to support initiatives working to advance the Triple Aim. CIVHC bolsters innovation in payment reform and care delivery through CO APCD data and analytic insights, education, consensus building, and convening.



**Lower
Costs**



**Better
Care**



**Healthier
Colorado**

CIVHC serves as the Administrator of the CO APCD through appointment from the Colorado Department of Health Care Policy and Financing (HCPF). Recommended by the Blue Ribbon Commission for Health Care Reform and enabled by House Bill 10-1330, the CO APCD is Colorado's most comprehensive source of health care claims information, providing insights into health care costs, utilization, quality, and health status of Coloradans.⁵

The complexity and scale of the database grow each month. It is the only claims repository in the state that represents the majority of insured lives in Colorado, offering a more complete picture of our health care system and making it unlike any other source of claims information available.

The CO APCD is a secure database compliant with all federal privacy laws, and currently contains over 450 million health insurance claims from 33 commercial health insurance companies, Medicare, Medicare Advantage, and Medicaid.

Colorado APCD Data & Covered Lives



Medicaid



Medicare &
Medicare
Advantage



*33 Largest
Commercial
Payers



450+ Million
Medical & Pharmacy
Claims



3.5 Million
Unique Lives



65% of
Insured Coloradans

Medicaid, Medicare Advantage and commercial payer claims include 2009-2014 adjudicated claims. Medicare currently includes 2009-2013 claims. Covered lives estimates based on 2014 Colorado Division of Insurance Health Cost Report.

*Commercial claims in the CO APCD do not currently include self-funded lines of business.

Updated Feb. 2016

Coloradans both generate and benefit from CO APCD data. When an insured Colorado resident receives a health care service, their provider files a claim with an insurance company. This claim contains important information including cost, location, and services rendered. The insurance company then securely submits the claim to the CO APCD. Once processed, these claims can provide valuable data about how Colorado is paying for and receiving health care. CIVHC then makes this information available to researchers, state agencies, advocacy organizations, consumers, and others, working to improve health care and costs for Colorado residents.

Claims Life-Cycle Through the CO APCD



Public CO APCD Analysis

One of CIVHC’s primary roles is to normalize and make sense of the millions of lines of claims data received every month and turn them into usable information. Increasing access to transparent health care data for all stakeholders is foundational to CIVHC’s work and to Colorado’s ability to make informed decisions that will have lasting benefit to the state. Public data releases, interactive maps and charts, and analyses available on comedprice.org are some of the tools CIVHC employs to bring transparency to the health care marketplace. [CO Medical Price Compare](#) also enables Coloradans to shop for location-specific price and quality information for services like having a baby or getting a knee replacement.

CO Medical Price Compare Homepage

CO MEDICAL PRICE COMPARE

ADMINISTERED BY CIVHC
POWERED BY TREQ 3M

Home Medical Service Prices State Costs & Utilization Get More Data

Find Prices for Medical Services
Search for comprehensive prices for select hospital-based services.

Coming Soon!
Price information for additional health care services at ambulatory surgery centers and endoscopy centers will be added to the site in 2016.

Step 1 Service Step 2 Location Step 3 Insurance

Your selected search criteria will appear here.

Select a Medical Service
What type of service are you searching for?
Select a Category... [dropdown] [checkmark]

Next

Find Costs and Utilization by Geography
Search for health care costs and utilization of services by county and ZIP Code 3.

Choose one of the most viewed selections.

- Total Cost of Care (TCC) **Total Cost of Care**
represents the total dollars paid for all health care services received by an individual such as hospital, clinic, physician visits, and prescription costs. Amounts paid by both the insurer and by the individual in the form of copays, deductibles and other cost sharing mechanisms are included. The results are displayed as a total dollars per person for the year. The rate represents the population living in that geography, not where the services were received.
- TCC Compared to Expected (C2E)
- Percent Generic Scripts
- 30 Day All Cause Readmissions (per population)
- ER Visits
- Diabetes Prevalence
- Asthma Prevalence
- Illness Burden

View all Maps or Reports [View Map] [View Report]

Custom CO APCD Analysis

In addition to public information, CIVHC provides custom data sets and reports to organizations and researchers seeking to advance the Triple Aim. Every release of data must benefit Colorado, as mandated by the enabling statute of the CO APCD. Over 75 entities across the health care spectrum have used CO APCD data to improve the lives of Coloradans, such as the Colorado Division of Insurance, Children's Hospital, Colorado Health Institute, Colorado Medicaid, and other non-profit organizations.

State Agencies and Insurance Companies Colorado Division of Insurance

Used CO APCD data to evaluate variation in costs for insurance premium rating areas.

Researchers and Non-Profit Organizations Project Angel Heart

CO APCD data is helping demonstrate how good nutrition results in cost savings for patients with chronic conditions.

Providers and Consumers Colorado Optometrist Association

CO APCD data supported increasing reimbursement rates for optometrists who treat Medicaid patients resulting in increased access to vision services for some of Colorado's most vulnerable patients.

CO APCD data is also informing local and national efforts including Colorado's State Innovation Model supported by the Center for Medicare & Medicaid Innovation, studies funded by the Robert Wood Johnson Foundation, and the creation of a National Center for Healthcare Transparency.



SIM
State Innovation Model



Robert Wood Johnson
Foundation

nrhi
Network for Regional
Healthcare Improvement

National Leaders in Transparency

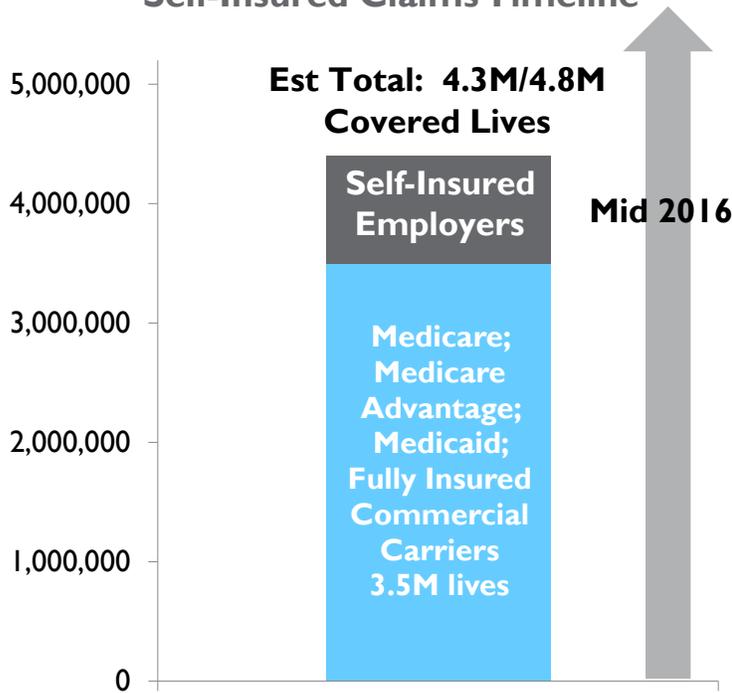
Colorado has one of the most innovative APCDs in the United States, and national organizations recognize CIVHC and the CO APCD as pioneers in the health care transparency movement. Seventeen states have some form of an APCD, and only a few of those provide custom data and analytics to stakeholders.⁶ The breadth of information that CIVHC provides, publicly and through custom requests, surpasses most state APCDs. Nationally, the CO APCD ranks in the top three for the degree of consumer access to price information available on comedprice.org.⁷

Successes and Opportunities

2015 was a watershed year for CIVHC and the CO APCD. Successes and learning opportunities emerged as implementation and expansion of this unique resource moved forward.

Successes

Self-Insured Claims Timeline



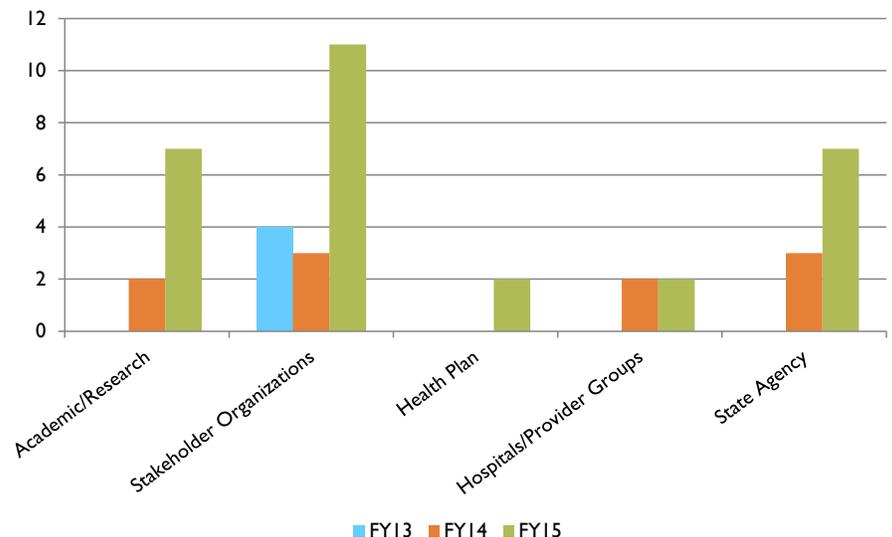
In June, HCPF enacted a rule change to expand the definition of “payer” under the CO APCD statute to include self-insured, employer-sponsored health plans. Submission of self-insured claims to the CO APCD began in January, and as a result, claims information from approximately 750,000 additional Coloradans will be incorporated into the data warehouse by summer 2016. Once all self-funded claims are incorporated (estimated 1.2M covered lives total), the CO APCD will represent approximately 90 percent of the insured Colorado population.

The remaining 10 percent of insured lives in Colorado includes those receiving care through the United States Armed Forces and the Federal government. There is currently no rule or mechanism in place to collect claims into the CO APCD from these payers.

The CO APCD is constantly growing in range and capacity as the monthly data processing stream includes new submitters and additional claims. In 2015, 11 new payers began submitting medical claims, and 12 payers started submitting dental claims to the database for the first time.

CIVHC fulfilled more custom CO APCD data requests in 2015 than ever before. Thirty-four entities received data, including researchers, state agencies, providers, and other stakeholders ranging from advocacy groups, for-profit companies, and non-profit member organizations. Stakeholder entities included organizations that received data for themselves or on behalf of their constituents (e.g. hospitals and provider groups). This data was used to inform research on topics including Medicaid reimbursement rates, new payment strategies, and assessing how providers prescribe opiates for patients having surgery. To highlight these and other innovative projects, CIVHC launched comedpriceshowcase.org, which has numerous examples of CO APCD data in action.

Custom Data Requests Fulfilled



The Colorado General Assembly renewed the CO APCD Scholarship Fund established in 2014, reallocating funds to offset the cost of data for organizations with limited resources working to improve health care across the state. These funds are specifically targeted for small non-profits, researchers, and academic institutions. HCPF administers the funds in partnership with CIVHC, and requesters must meet specific criteria in order to be considered for the scholarship.

Scholarship Recipients Calendar Year 2015

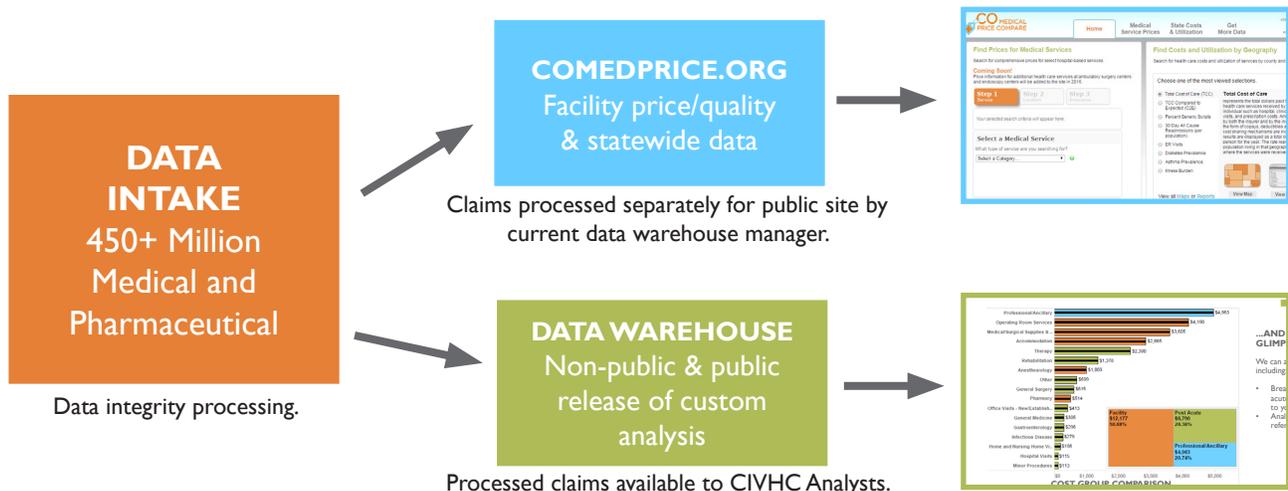
- Colorado Network
- University of Colorado, Denver (UCD) Department of Anesthesiology
- Colorado Physical Therapy Association
- Oregon Health
- Colorado Department of Public Health and Environment (CDPHE) Med Adherence
- CDPHE Immunizations
- Department of Insurance - Autism
- Project Angel Heart
- UCD Accountable Care Collaborative
- UCD Department of Surgery
- Susan G. Komen Foundation, Denver
- Duke University
- Regis University
- CDPHE Breast and Cervical Cancer
- Hepatitis C Connection
- Department of Health Care Policy and Financing (HCPF)
- Colorado Medical Society
- Brigham and Women's
- Engaged Public

Opportunities

Working with claims data is still as much a new art as science. While CIVHC uses a standard data submission guide, no two payers process claims the same way, and the CO APCD receives millions of claims each month spanning many payers using different types of systems.

In 2012, CIVHC implemented the CO APCD, establishing specific rules regarding what information would be included on the claims submitted and the procedures for processing claims for inclusion in the data warehouse. The CIVHC Data and Analytics team evaluates and refines these rules each year, streamlining procedures and ensuring that the CO APCD contains the highest quality data possible.

Two separate data sets exist in the CO APCD data warehouse. One is available to CIVHC data analysts and contains all processed claims ready to support non-public release to data requestors. The other data set forms the basis of the comedprice.org website where facility cost and quality information and statewide data from 2009-2012 are displayed publicly.



In order to display new measures on comedprice.org, CIVHC's data vendor processes the claims bound for the website using proprietary software and different processing rules than those used for claims designated for non-public releases. CIVHC then performs extensive quality assurance tests on the website data prior to each update. During 2015, several payer submission and processing discrepancies were identified through the quality assurance process, requiring significant numbers of payer resubmissions and reprocessing time.

These discrepancies and CIVHC's unwavering commitment to release only valid and reliable data and analytics resulted in the postponement of planned updates to the CO APCD website in 2015. At the heart of the planned updates to comedprice.org was the addition of Medicare Fee-For-Service (FFS) claims and 2013-2014 data for Medicaid and commercial payers. As this report includes statewide measures publicly reported, all analyses presented (unless otherwise noted) reflect data currently available on the website, which includes 2009-2012 Medicaid and commercial health insurance claims.

To safeguard against additional delays, CIVHC took critical and decisive steps to improve quality assurance procedures and increase staff capacity. Significant growth of the Data and Analytic team now enables CIVHC to conduct deep, proactive dives into the data, resulting in identification of payer submission and processing discrepancies. Working with the data warehouse manager and the payers, the CIVHC team developed and applied long-term solutions that will enable more rapid deployment of trusted, reliable data releases in the future.

Sustainability of the CO APCD

The CO APCD receives no ongoing 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 allowed CIVHC to develop and implement the CO APCD, with the expectation it will become a self-sustainable resource.



As the demand for data has increased, so have operational costs. The CO APCD operating budget was \$2.7 million in fiscal year 2015 (July 2014 – June 2015), and has increased to \$4.4 million in fiscal year 2016. Annual operating costs cover maintenance, analytics, data and analytic staff, continued data onboarding, and developing and releasing CO APCD public resources. Grant funding for implementation and ramp up is largely phasing out in 2016, and ongoing operational costs must be met through delivery of non-public releases of data, including providing data to local and national grant projects.

In spite of financial assistance provided by the CO APCD Scholarship Fund, it is difficult for many organizations to pay data release and use fees; and there continues to be an inherent tension between the need to make data available and the need to create a sustainable CO APCD business model.



Lower Costs

The national health care system is entrenched in payment models that drive up the cost of care without necessarily improving quality and outcomes. The practice of paying for volume, not value, often results in expensive and unnecessary tests or services instead of more effective and strategic ways to keep patients healthy. In recent years, alternative methods of payment have gained ground as rising costs inch toward economically unsustainable levels.

CIVHC has supported advancing alternative payment models for many years, initially by convening stakeholders to develop a [Framework for Payment Reform for Colorado](#). As the CO APCD has grown, CIVHC has been able to provide data and insights to help organizations develop new payment models such as bundled payments.

Recent Payment Reform Efforts Include:

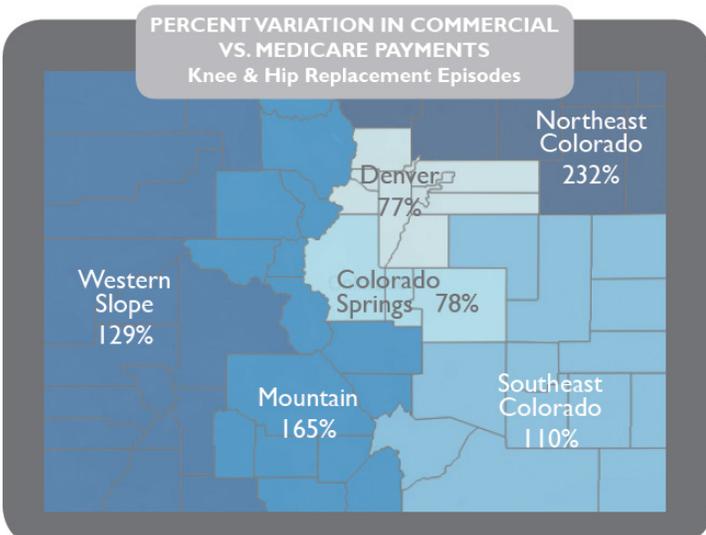
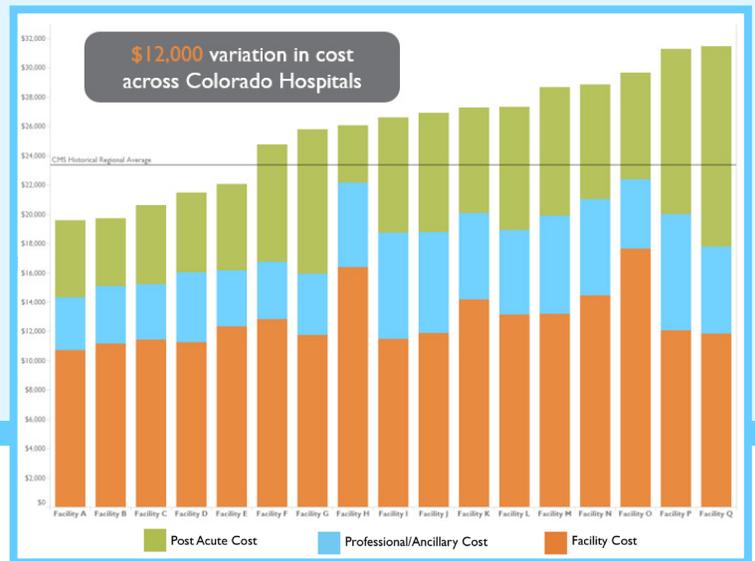
Colorado Commission on Affordable Health Care



Chief Medical Officer, Jay Want, M.D., is CIVHC's representative on the Colorado Commission on Affordable Health Care and provides the Commission with CO APCD data and analytics to inform them of cost savings opportunities.

Lower Extremity Joint Replacement Bundled Payment Variation

The CO APCD can inform Colorado hospitals required to participate in Medicare's new Comprehensive Care for Joint Replacement payment model, which begins April 1, 2016.



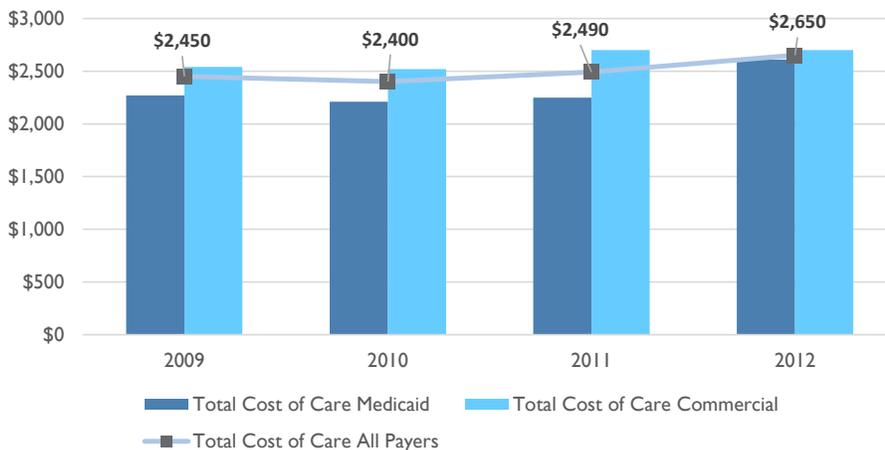
During exploration of CO APCD knee and hip replacement data, CIVHC uncovered wide payment variations for these services across Colorado and released a [Cost Driver Spot Analysis](#) on this topic in February 2016.

Trends in Spending Across Colorado

How Much is Spent?

To calculate the total cost of care, CIVHC combines all dollars paid by both the patient and insurance company for health care services, including hospital stays, clinic and provider visits, and prescription costs. The results provide an overview of how much money is spent per patient per year (PPPY).

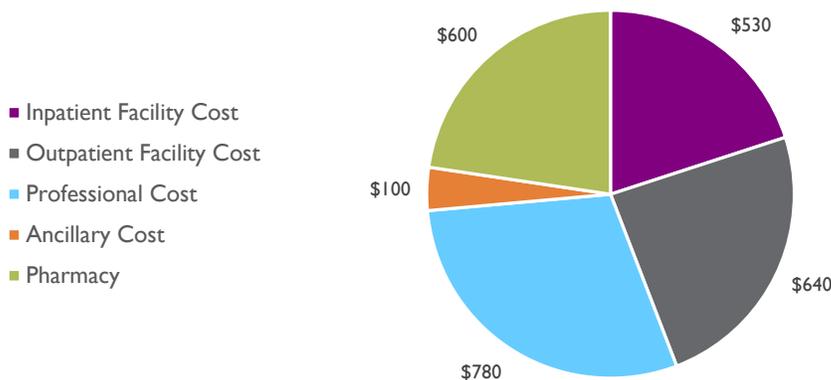
**CO Total Cost of Care PPPY
(2009-2012, Medicaid and Commercial)**



Between 2009 and 2012, total dollars spent by Medicaid beneficiaries and patients covered by commercial health plans increased. Medicaid payments rose most significantly, from \$2,300 in 2009 to \$2,600 in 2012, a \$300 per person increase. Commercially insured patients saw a smaller increase of \$200 per person per year, yet began at higher price points with costs of \$2,500 in 2009 moving to \$2,700 in 2012.

Preliminary investigation of spending from 2012-2014 indicates a change, with Medicaid costs trending downward and commercial costs rising. This could be due in part to the implementation of Medicaid Regional Care Collaborative Organizations and more commercially insured lives in the market as a result of the Affordable Care Act.

**CO Total Cost of Care PPPY by Service
(2012, Medicaid and Commercial)**



Where is the Money Going?

As total cost of care for Medicaid and commercial patients converged to a difference of \$100 in 2012, spending on different types of health care services remained proportional across the years.

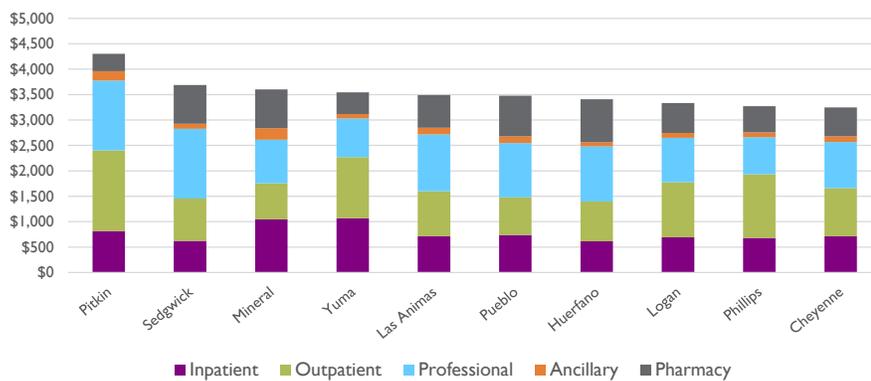
Professional costs, listed separately from the setting in which they occurred, make up the bulk of patient spending, totaling about \$800, or just under 30 percent of the annual spend. Outpatient costs, including Emergency

Department visits, account for the second highest amount of allocated health care dollars, with hospital inpatient visits being the third highest.

Opportunities for Innovation

Colorado's geographic and economic landscapes are wildly diverse. The densely populated and urban Front Range corridor has very different health care circumstances than the rural and mountain regions where neighbors are few and far between. Looking at where money is spent on a county level can provide insight into avenues of potential cost savings.

CO Counties with Highest Total Cost of Care PPPY by Service (2009-2012 avg., Medicaid and Commercial)



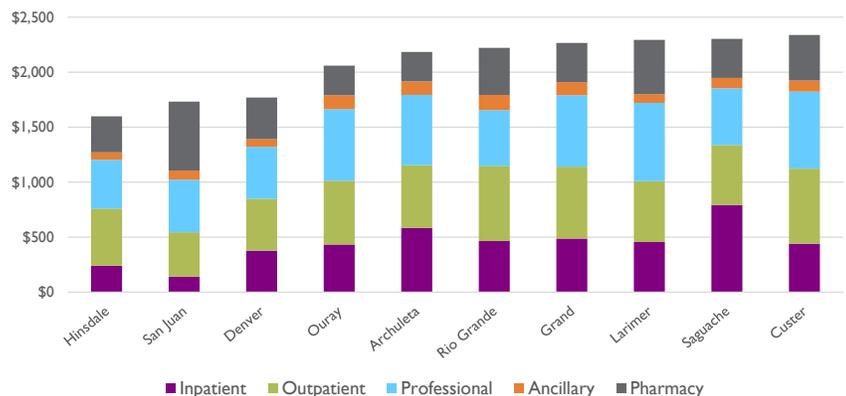
Patients in mountainous Pitkin County, including the town of Aspen, spend an average of \$4,300 per year, with outpatient and professional expenses driving the total cost.

To the south, Hinsdale County has the lowest average total cost of care at \$1,600 annually. Like Pitkin, outpatient and professional fees drive costs in Hinsdale.

It is important to note that the data included in this report and on the website comedprice.org is based on where the patient lives, not where the patient received care. So, counties with higher or lower cost of care may not necessarily experience lower or higher cost of care for facilities or services in that county. However, analysis of that information is available through the CO APCD upon request.

By breaking down costs and dollar allocations, CO APCD data is invaluable to stakeholders dedicated to changing how Colorado pays for health care.

CO Counties with Lowest Total Cost of Care PPPY by Service (2009-2012 avg. Medicaid and Commercial)



Custom Data in Action: Bundled Payments for Palliative Care in Colorado

Palliative care focuses on providing patients with relief from the symptoms, pain, and stress of serious illness, whatever the diagnosis. Numerous studies have shown that effective palliative care results in lower costs and improved quality of care for patients and families. In 2014, Colorado was one of the first states to adopt a standard definition of palliative care; yet, vulnerable patients across the state cannot access these services because many providers do not receive adequate reimbursement to cover the cost of effective, team-based care.

Optio Health Services and Colorado Access are using CO APCD data to address reimbursement rates and increase access to care by studying the impact of a bundled palliative care pilot conducted from 2010-2012. The Colorado Health Foundation funded the original project, which focused on patients with severe illnesses eligible for both Medicaid and Medicare Advantage.

The study involves analyzing patient claims from six months prior, during, and six months following palliative care services. Analysts will compare claims from the pilot group to a control group of similar patients who did not receive palliative care services and determine any utilization and cost savings resulting from treatment. The outcomes of this study may help support widespread adoption of bundled payments for palliative care services across Colorado.



Better Care

The United States spends more money on health care than any nation in the world, yet outcomes are worse than those of other countries.⁸ In essence, for all the money spent, Americans are no healthier. As discussed earlier, the health care payment system does not encourage coordinating and improving care. On the contrary, it supports more tests and appointments, which often result in higher costs and frustrated patients. Providers are caught in the crossfire, practicing in a system designed to treat acute symptoms rather than focused on keeping patients healthy.

Early on, CIVHC began convening task forces of stakeholders to determine what aspects of care delivery had the most potential to improve care and lower costs in Colorado. Based on task force recommendations, CIVHC’s primary areas of delivery system redesign focused on improving transitions of care and increasing access to comprehensive palliative care services.

Palliative Care CIVHC Task Force

In 2015, CIVHC’s Palliative Care Task Force published results of a survey highlighting gaps in access to these important services across Colorado.

Healthy Transitions Colorado Managing Partner

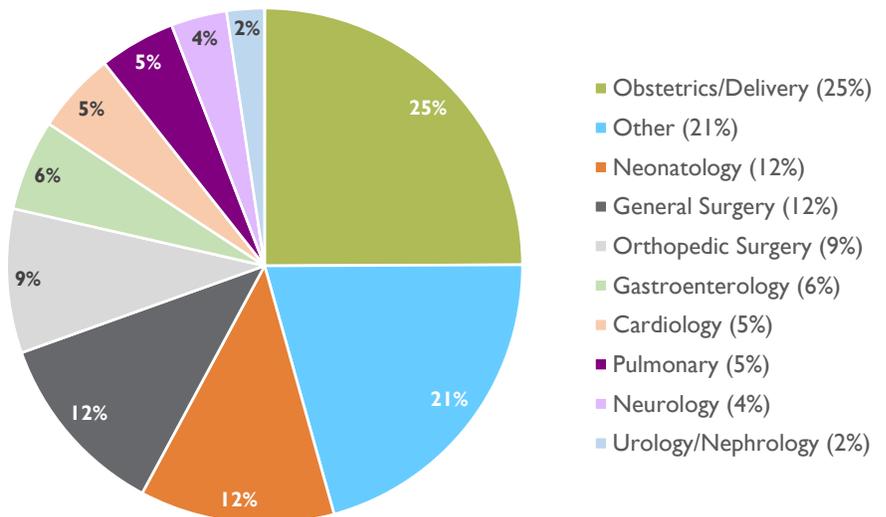
CIVHC is the managing partner of the statewide care transitions campaign, Healthy Transitions Colorado (HTC). HTC is a coalition of local organizations with the goal to reduce avoidable readmissions in Colorado.

Accessing Colorado’s Health Care System

Where are Coloradans Receiving Care and For What Reasons?

Fundamental to improving how we deliver care is understanding how and why patients are accessing the health care system. This information can help payers, providers, and facilities adapt treatment and care options to ensure the highest quality care in the most appropriate setting.

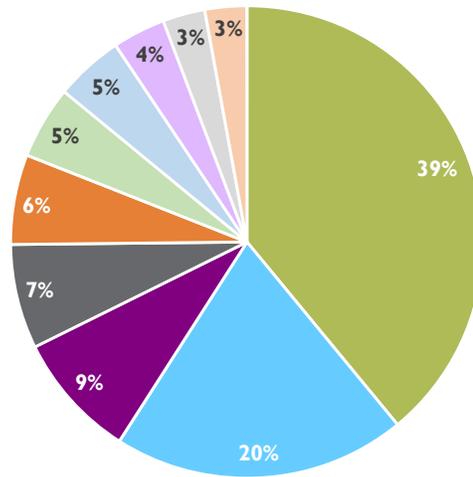
CO Commercial Inpatient Utilization by Service (2012)



CO APCD utilization data captures the total number of visits or admissions at each type of facility and can identify how, why, and where patients are accessing Colorado’s health care system.

CO Medicaid Inpatient Utilization by Service (2012)

- Obstetrics/Delivery (39%)
- Other (20%)
- Pulmonary (9%)
- General Surgery (7%)
- Neonatology (6%)
- Gastroenterology (5%)
- Urology/Nephrology (5%)
- Neurology (4%)
- Orthopedic Surgery (3%)
- Cardiology (3%)



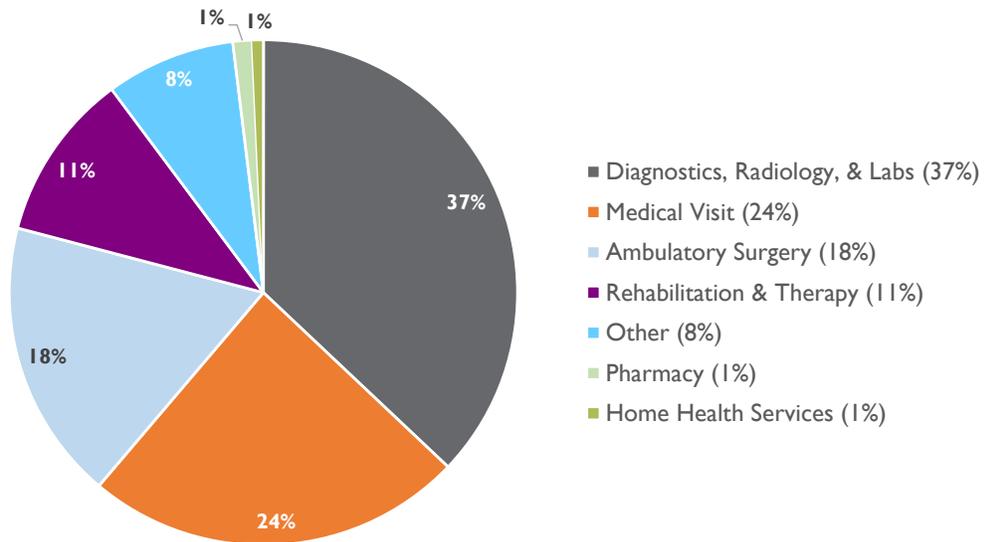
In 2012, obstetrics and delivery were the most highly used inpatient services for both commercially insured patients and Medicaid beneficiaries.

More Medicaid patients visited Colorado facilities for pulmonary concerns, while the commercially insured had more orthopedic surgeries.

CO Commercial Outpatient Utilization by Service (2012)

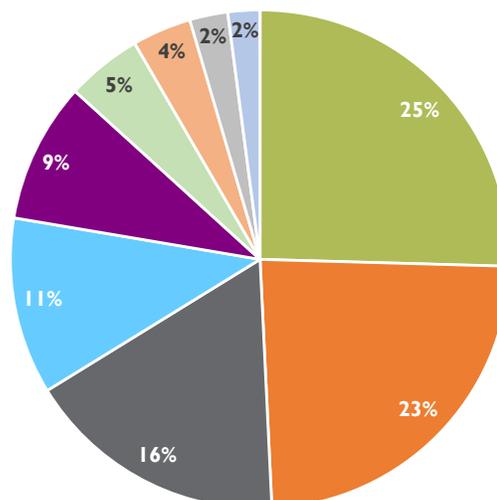
While inpatient utilization varied moderately between commercial and Medicaid patients, utilization of treatments in outpatient facilities are drastically different in the two populations.

Patients on Medicaid used nearly 25 percent of all outpatient services in 2012 on home health care, whereas the commercially insured used less than one percent for the same treatment.



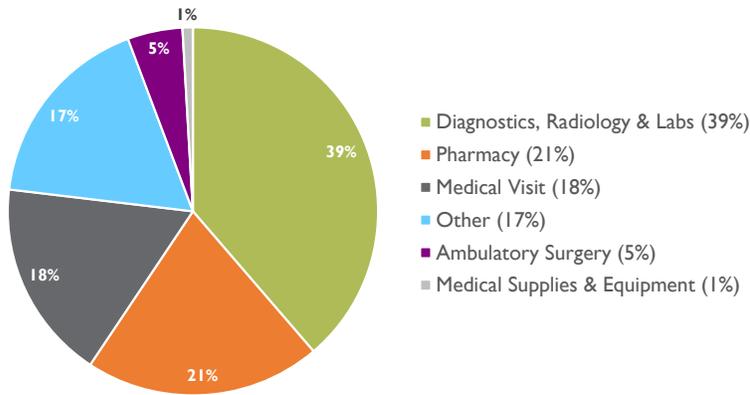
CO Medicaid Outpatient Utilization by Service (2012)

- Home Health Services (25%)
- Medical Visit (23%)
- Diagnostics, Radiology, & Labs (16%)
- Other (11%)
- Rehabilitation & Therapy (9%)
- Pharmacy (5%)
- Dental (4%)
- Clinic (2%)
- Ambulatory Surgery (2%)

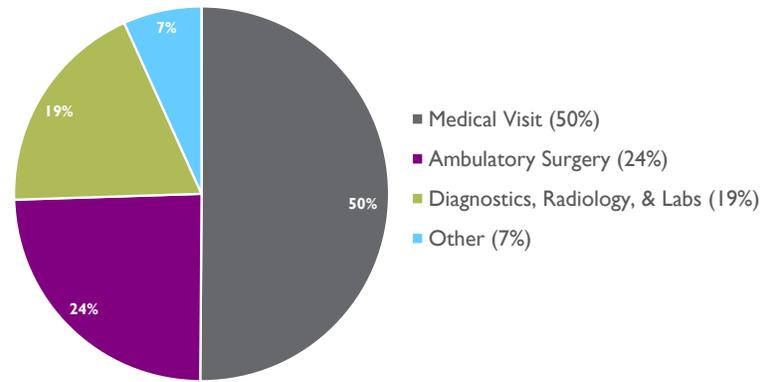


Commercially insured patients used outpatient services predominately for diagnostic testing, imaging services, medical visits and ambulatory surgeries.

CO Medicaid Emergency Room Utilization by Service (2012)



CO Commercial Emergency Room Utilization by Service (2012)



Opportunities for Innovation

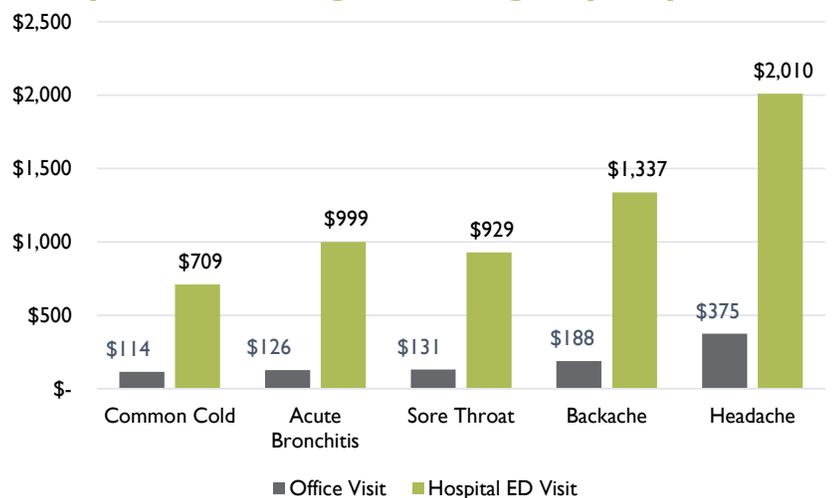
In order to receive the best care possible at the lowest cost, patients should seek treatment at the most appropriate care setting for their condition. For example, many patients use the emergency room (ER) for conditions that are treatable at doctor's offices or urgent care centers.

Analysis of commercial claims in the CO APCD suggests that Coloradans could save an average of \$1,200 per visit. Condition-specific analysis shows that the common cold costs nearly \$600 more to treat at the ER than in a doctor's office, while the potential savings for a headache is \$1,600.

Similarly, going to the ER for back pain costs over \$1,200 more than in an office setting, and being seen in the ER for a sore throat costs almost \$900 more.

Breaking down how Coloradans use the health care system can help providers, facilities, and public health advocates design situation-specific interventions including patient education, enhanced coordination among providers and care givers, and increased access to outpatient offices and clinics at night and on the weekends.

Average Costs to Treat Common Ailments: Outpatient Setting vs. Emergency Department



2014 Commercial Payer Claims Analysis, Colorado All Payer Claims Database

Custom Data in Action: Reducing ER Use for Dental Concerns

Recent trends indicate that ER utilization for non-emergent dental concerns is on the rise across the nation. In most cases, the ER providers do not administer dental treatment; they write prescriptions for antibiotics or pain management.

Oral Health Colorado is using CO APCD data to help create a strategy to refer these non-emergent dental ER patients to oral health clinics. Since adults in Colorado are now eligible for dental coverage via Medicaid, additional avenues are available for cost-effective oral health treatment. The study, once completed, will potentially identify new cost-savings strategies in the dental care marketplace.



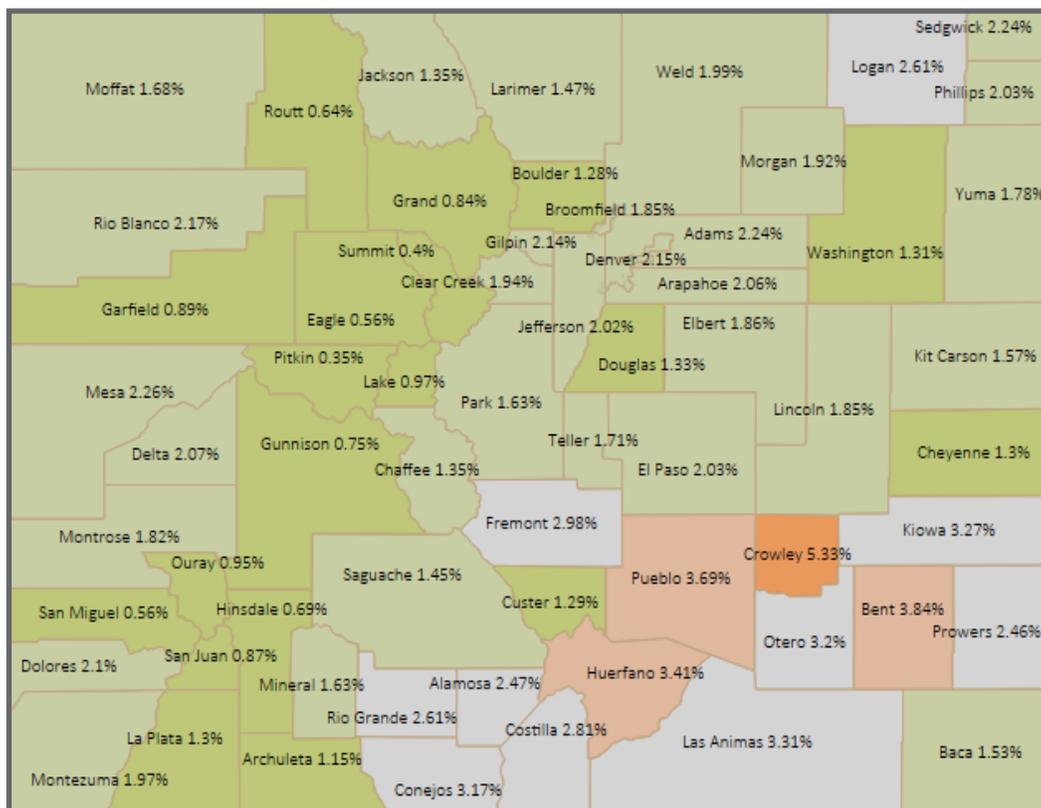
Healthier Colorado

In spite of being the most active state in the nation, Colorado's obesity rates have risen steadily over the last decade.⁹ This increase can result in a higher prevalence of chronic diseases such as diabetes. The state's mixed geography creates challenges that no single solution can overcome. From rural plains and mountain regions to more populous and diverse urban areas, the needs of communities vary greatly. Successful programs geared toward enhancing health and the quality of life or reducing chronic disease must meet the specific needs of each unique community.

CIVHC is committed to using data to inform innovation and increase transparency in the health care marketplace while identifying opportunities to improve the health of Coloradans. CO APCD data related to chronic disease prevalence, cost to treat, and health care service utilization allows stakeholders to target interventions and ensure that public health dollars are spent in areas most in need.

Chronic Conditions Across Colorado

Chronic Condition - Statewide Diabetes Prevalence (2009-2012, Medicaid and Commercial)



Which Counties Have Chronic Conditions?

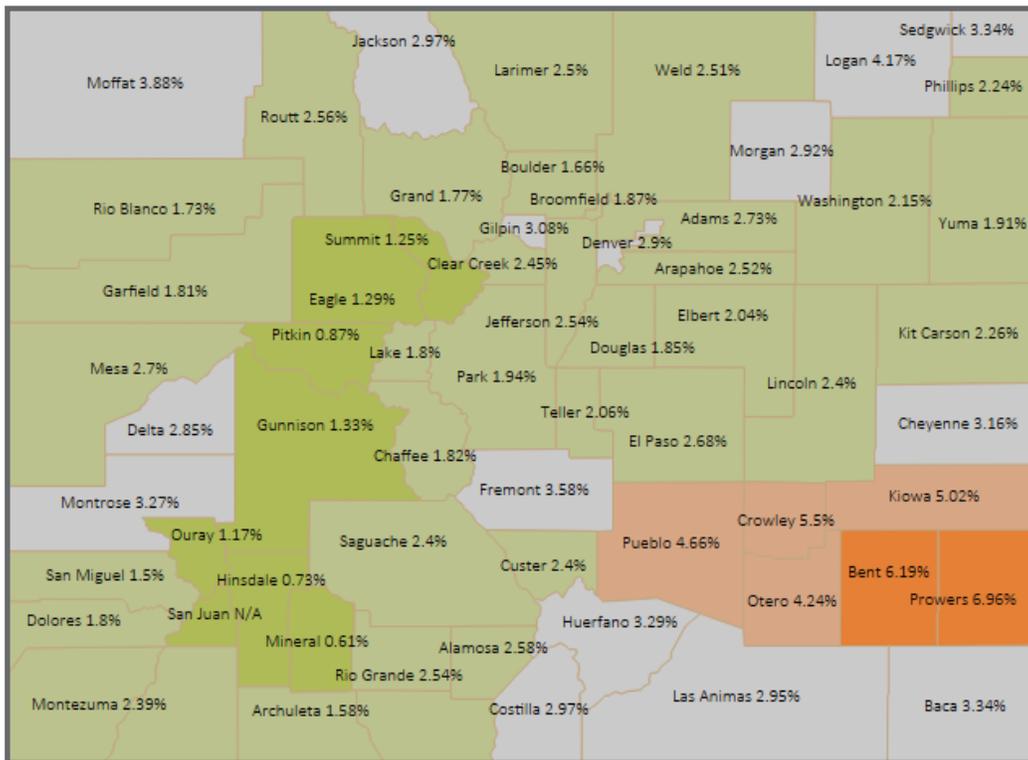
Chronic condition prevalence describes the percentage of individuals diagnosed with or treated for a specific illness in each county during a given calendar year. Analyzing the four-year average of chronic condition prevalence in Colorado counties can help target public health interventions.

Between 2009 and 2012, 5.38 percent of the population of Crowley County suffered from or were diagnosed with diabetes. Many of the surrounding counties in the southeastern portion of Colorado also had a relatively high average prevalence of diabetes.

The variation in the average prevalence of asthma during the same time frame is more widespread. Counties on the western slope and the eastern plains joined the southeastern regions with moderate to high percentages of patients with asthma.

Detailed county-level information regarding chronic conditions allows providers and policy makers to examine conditions in these regions and develop informed, cost-effective action plans to ensure the health of Coloradans.

Chronic Condition - Statewide Asthma Prevalence (2009-2012, Medicaid and Commercial)



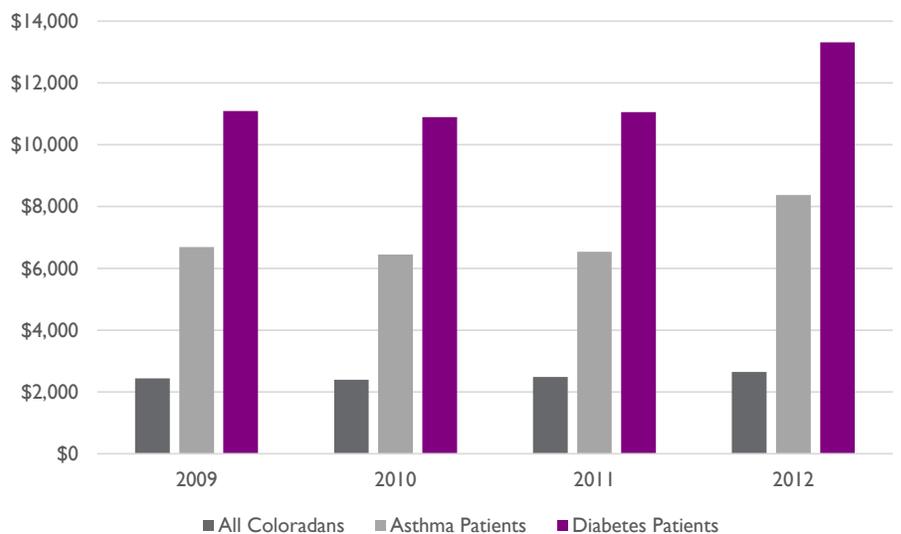
How Do Chronic Conditions Affect Health Care Costs?

Patients with chronic conditions drive up the cost of care. Healthy people offset those costs by using fewer health care resources.

In 2012, the total cost of care for a patient with asthma was \$8,400, nearly \$6,000 more than the average state spend of \$2,600 per person.

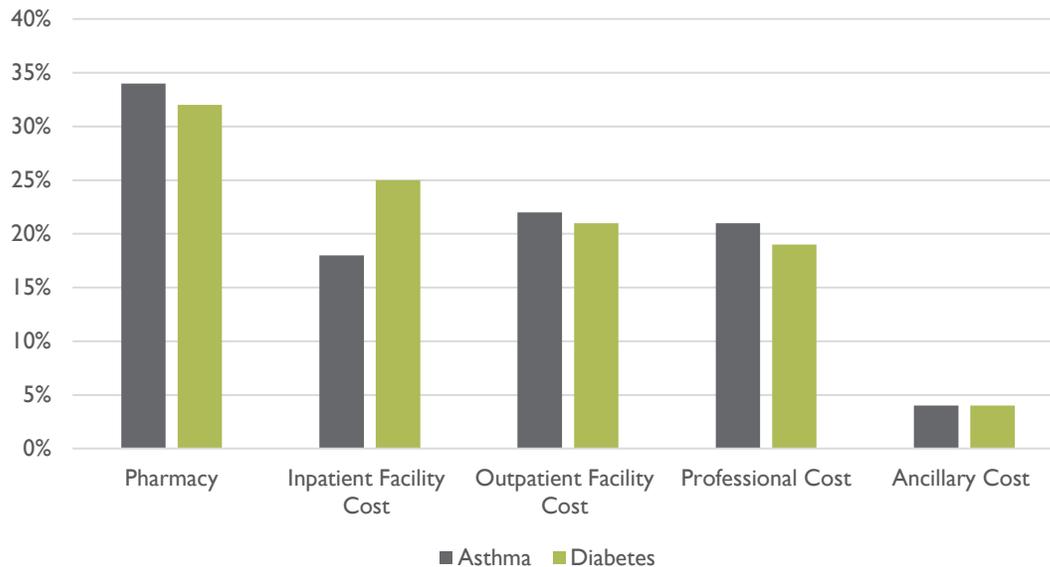
Diabetes care is even more costly with the annual cost to treat a person with diabetes being \$13,300 - five times more than the rest of Colorado.

CO Asthma and Diabetes Total Cost of Care PPPY (2009-2012, Medicaid and Commercial)



Opportunities for Innovation

CO Asthma and Diabetes Total Cost PPPY Percentage by Service (2012, Medicaid and Commercial)



Prescription expenses are the most significant cost drivers for both asthmatics and diabetics. Outpatient facility and professional costs also make up large portions of annual spend.

Investigating ways to improve care delivery and assessing the efficacy and cost of drug treatments could go a long way toward improving the well being of asthma and diabetes sufferers. At the same time, public health campaigns and preventive care initiatives in counties with high chronic conditions prevalence can move the state closer to the ultimate goal: a healthier Colorado.

Custom Data in Action: Improving Care for Inflammatory Bowel Disease

Successful management of chronic conditions frequently requires years of costly trial and error with medications and treatment regimens. In Colorado and the surrounding states, there is a growing incidence of Inflammatory Bowel Disease (IBD). This condition comes with a high price tag, as annual treatment costs in 2011 ranged from \$12,679 to \$18,739 per patient.¹⁰

Betterpath, Inc., a health care technology company, intends to eliminate some of the trial and error associated with identifying and prescribing effective IBD treatment. Using commercial CO APCD data with specific IBD procedural codes, they are creating algorithms to determine what medications and treatments have the best outcomes and lowest costs for patients with specific characteristics. Once developed, Betterpath plans to build a tool for providers to compare, in real-time, their specific patient's demographic and medical information to others in a large database. This comparison will allow them to identify the best treatment options based on cost and effectiveness.

CIVHC and the CO APCD

The Road Ahead

Since implementation in 2012, the CO APCD has received national recognition for its design and capabilities. Moving into 2016 and beyond, CIVHC is committed to maximizing the value of this important state resource and implementing new ways to provide actionable CO APCD data to Colorado. In addition, CIVHC is in the process of securing new data warehouse vendors, with services to begin in 2017.

More Claims

Self-funded claims began streaming into the CO APCD at the beginning of 2016. In the coming year, CIVHC anticipates adding 12 additional self-funded payers as well as claims from at least 10 new commercial medical and 8 dental payers.



More Custom Fulfillments

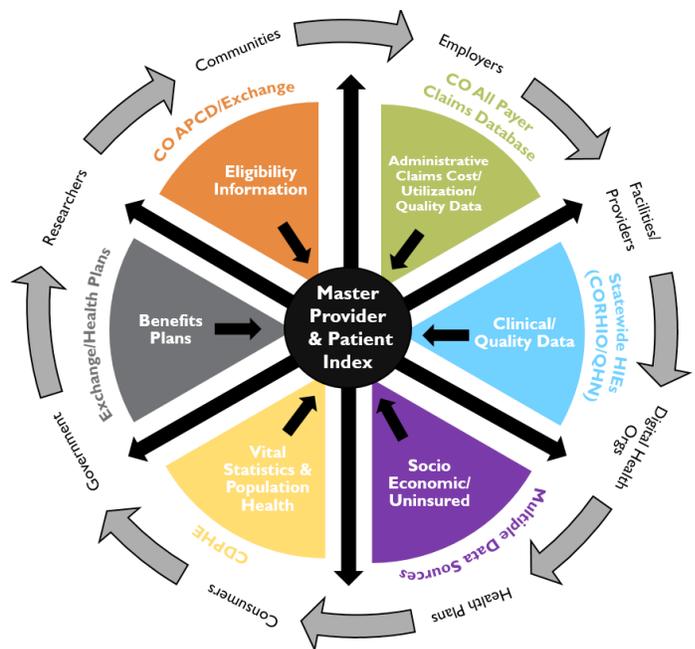
As capacity of the CO APCD grows, so does CIVHC's ability to provide data to researchers, providers, payers, and consumers. Over 100 data requests are currently moving through the fiscal year 2015/2016 pipeline, as more and more stakeholders recognize the value of the CO APCD data to their Triple Aim-driven initiatives.

Enhanced Tools and Access

The CO APCD is an incredible resource for those looking to revolutionize health care. In the years to come, CIVHC will introduce improvements to increase the scope of and access to the CO APCD. Planned enhancements include online portals, compliant with security and privacy regulations, where stakeholders can use analytic tools to explore regularly updated interactive data and reports.

Adding Critical Data Sources

The potential of the CO APCD is tremendous, yet CIVHC realizes that claims data only tells part of the health care story in Colorado. By aligning claims data with clinical, socio-economic, geographic, and environmental information, it may be possible to see how the circumstances in patients' lives affect their health. To increase opportunities for such valuable analysis, CIVHC is collaborating with other organizations to combine claims data with non-claims data sources. The first step in this process is development of a Master Provider & Patient Index.



More Consumer Information

The shift toward high deductible insurance plans is forcing some patients to choose between receiving treatment and paying the electric bill or between filling prescriptions and buying groceries. In this new era where costs are being shifted to consumers, information to help them make the best possible cost and treatment decisions is imperative.

To enhance public price and quality information, CIVHC's data and analytic team worked hard to implement new data submission and processing procedures in 2015. Plans for more frequent and expanded public releases of facility-specific cost information are in progress. CIVHC anticipates several waves of updates to the existing cost and quality measures on comedprice.org.

Website Facility Price Quality Release I

- Knee arthroscopy
- Shoulder arthroscopy
- Cataracts
- Colonoscopy
- Total knee replacement (2014)
- Total hip replacement (2014)
- Vaginal births (2014)
- Cesarean births (2014)



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Informing Innovation

The CO APCD provides a neutral, unbiased guide to help navigate Colorado's health care landscape. Such a guide is necessary now more than ever as reform measures and the growing trend of transparency herald fundamental shifts in how health care is paid for and administered.

Health care dollars are at a premium, and all players in the marketplace will need agility and ingenuity to make a meaningful impact. Data and information are becoming increasingly critical for adaptability and survival in a market once shrouded in mystery.

As Colorado continues to drive toward the Triple Aim, the CO APCD will continue to gain momentum as a trailblazing force for change, illuminating opportunities for improvement and kindling essential innovations to make Coloradans healthier.

Website Facility Price Quality Release II

CT Scans

- Abdomen and pelvis w/contrast
- Abdomen and pelvis w/o contrast
- Head/brain w/o dye

MRI

- Brainstem w/dye
- Brainstem w/o dye
- Echo exam of abdomen

X-Ray

- Chest frontal view
- Chest frontal and lateral view

X-Ray Exam

- Abdomen
- Ankle
- Foot
- Hand
- Knee
- Shoulder
- Wrist



Website Statewide Cost Utilization Release

- Medicare claims 2011 - 2013
- 2013-2014 Medicaid and Commercial claims
- Health statistics regional comparisons
- Observation stays
- Chronic condition prevalence
 - Hypertension
 - Depression
- Preventive care screening measures
 - Breast cancer
 - Cervical cancer
 - Colorectal cancer
 - Diabetes care LDL-C

Recommendations *to the* General Assembly



**Lower
Costs**



**Better
Care**



**Healthier
Colorado**

The CO APCD grows in scope and value each year, and as the Administrator, CIVHC continually looks for ways to evolve the database and realize the full potential of this powerful asset. To that end, CIVHC suggests the following regulatory changes (“track changes” included to indicate proposed modifications to current language):

- Revision of the language in Section 1.200.5 B of the Code of Colorado Regulations by the Department of Health Care Policy and Financing in order to:
 - Include a provision for data requestors to improve economic outcomes for Colorado as well as health care and public health.
 - Allow for administrative streamlining of the data release process.
- Suggested Language:
 - “A data release review committee shall review **the requests containing protected health information** and advise the administrator on whether release of the data is consistent with the statutory purpose of the APCD, will contribute to efforts to improve health care **or economic benefit** for Colorado residents and complies with the requirements of HIPAA. The administrator shall include a representative of a physician organization, hospital organization, non-physician provider organization and a payer organization on the data release review committee.”¹¹
- Revisions of the definition of “small group payer” in the DSG from “2-50” to “2-100” lives. The current range of 2-50 lives listed in the DSG is not in alignment with the definition of small group payer in the 2015 amendment of the Patient Protection and Affordable Care Act and therefore has caused confusion among payers.
- Modification of the Data Submission Guide to ensure collection of data from payers using non-traditional payment models such as capitation, incentive payments, value-based payments, and bundles. The CO APCD captures information regarding whether a claim is from an alternative payment model but does not receive cost data in a comparable manner to traditional fee-for-service claims. As more payers move toward alternative payment models, inclusion of capitation-based payment models will allow the CO APCD to reflect a more complete picture of health care in Colorado.

For more information regarding suggested changes, please email info@civhc.org.

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Appendix A: Sustainability of the CO APCD

As the demand for data has increased, so have operational costs. The CO APCD operating budget was \$2.7 million in fiscal year 2015 (July 2014 – June 2015), and increased to \$4.4 million in fiscal year 2016. Annual costs cover maintenance, analytics, data and analytic staff, continued data onboarding, and developing and releasing CO APCD public resources. CIVHC’s additional operating expenses were budgeted at nearly \$1 million for FY 2016.

CIVHC Funding FY 15 (July 2014-June 2015)	
Source	Amount
Restricted Grants	\$1,328,928
Operating Grants	\$1,657,500
Earned Revenue (including scholarship)	\$1,348,267

Non-Public Release Fees for CO APCD Data

One of CIVHC’s goals is to make CO APCD data as affordable as possible so stakeholders are able to access the data to support their Triple Aim efforts. To this end, CIVHC engaged a national provider of market intelligence and advisory services to review and provide guidance on the data release fees and business model of the CO APCD. Non-public data release fees are in alignment with similar data products available on the market locally and nationally. In addition, CIVHC has begun developing “standard” report options that can be offered at below market prices to increase the use of CO APCD data. For highly customized data sets, including matching criteria and annual subscriptions the data release fees may fall outside the ranges listed below.

Non-Public Data Release Fees for CO APCD Products		
Standard Reports (NEW)	Custom Reports	De-Identified and Limited Data Sets
Starting at \$5,000	\$1,500-\$20,000	\$15,000-\$50,000

Funds are available to offset the cost of data for organizations with limited resources working to improve health care across the state. The CO APCD Scholarship can assist small non-profits, state agencies, and academic institutions, that meet specific criteria, gain access to this valuable data source. Bundled prices and discounts for small non-profit organizations are also available to help reduce the cost for licensing CO APCD data.

More information on the CO APCD Scholarship and non-public releases of CO APCD data can be found on the CIVHC website.

Appendix B: CO APCD Data Requests Fulfilled

(as of February 2016) - all requestors paid licensing fees

Stakeholder / Requestor	Scholarship	Purpose	Type of Request	HIPAA Regulation Pursuant to Approval	DUA in Place
Payer		Analysis of medical and Rx costs for traditional, non-value based, hospital, and physician reimbursement in order to strategize how to re-enter the Colorado small group market with a value-based reimbursement model for physicians.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	Investigation of the outcomes of transplant patients taking brand name immunosuppressants compared to those taking generic medications, so as to quantify cost implications for both patients and payers.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	To study and estimate the occurrence, treatment, and cost of care for skin cancer in the United States. This is a state-by-state analysis, using All Payer Claims Databases of in states with these systems combined with data from the Center for Medicare and Medicaid Services in all 50 states.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Vendor		Development of a comprehensive decision-support tool to help customers find a health insurance plan. Aligns with Connect for Health Colorado's anonymous shopping tool and other decision support tools, enabling users to estimate their total out-of-pocket costs (e.g., premium, deductible, coinsurance, co-pays).	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Provider		Reduce variation in care for specific pediatric diseases by investigating supply utilization, length of stay, and complication rates among children undergoing appendectomies.	Identifiable Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
State Agency		To provide the State with specific and unique analytical services to accomplish the Triple Aim for Colorado, including analyzing overlapping insured stakeholders and making Medicaid claims data available on CIVHC's website.	De-identified Data Set	N/A aggregated de-identified data only	Yes
State Agency	Yes	Analysis of insurance rates to encourage provider participation and utilization, and inform state agencies whether the current rates are sufficient to improve Coloradans' access to quality care.	De-identified Data Set	N/A aggregated de-identified data only	Yes
State Agency		Comparison of unadjusted Medicaid premiums to Commercial payers over time to determine the effectiveness and efficiency of payments.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes

Stakeholder / Requestor	Scholarship	Purpose	Type of Request	HIPAA Regulation Pursuant to Approval	DUA in Place
State Agency	Yes	Analysis of utilization rates to ensure appropriate coverage for children with autism and determine the best treatment model with the most appropriate insurance coverage minimums.	De-identified Data Set	N/A aggregated de-identified data only	Yes
State Agency	Yes	Improve transparency and identify systems with greater inequity through analysis of discrepancies between billed charges and reimbursements to providers.	De-identified Data Set	N/A aggregated de-identified data only	Yes
State Agency	Yes	Determine the proportion of Colorado adults with high blood pressure who adhere to prescribed medication regimens.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
State Agency	Yes	Create an evidence-based foundation to increase access to immunizations in Colorado.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
State Agency	Yes	Improve hepatitis C virus (HCV) surveillance, screening practices, and clinical outcomes by accurately characterizing the HCV epidemic in Colorado.	Custom Report & Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
State Agency	Yes	Increase breast and cervical cancer screening rates in Colorado and develop program activities that better serve low-income, uninsured women.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
State Agency		To find common solutions to workforce data needs and form effective collaborations for the collection, management, sharing, and distribution of health professional workforce data among members of the Health Professional Workforce Data Consortium.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	Analyze charge data related to professional services as described under the Colorado Consumer Protection Act in order to facilitate discussions among providers, payers, and consumers, informing policy changes.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit		Development of a comprehensive decision-support tool to help customers find a health insurance plan.	De-identified Data Set	N/A aggregated de-identified data only	Yes
Academic/ Researcher		To improve health outcomes, lower per capita costs, provide better service through technological innovation, and enhance efficiency and effectiveness through process improvement.	Identifiable Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes

Stakeholder / Requestor	Scholarship	Purpose	Type of Request	HIPAA Regulation Pursuant to Approval	DUA in Place
Non-profit	Yes	Test the impact of the Older Americans Act investments on the communities DRCOG serves. The objective of this project is to understand the value that the Area Agency on Aging offers the community in terms of healthcare savings and the promotion of healthy lives.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	Inform policy, improve the health of exchange patients by investigating the impact of Colorado's health exchange on healthcare utilization, and explore how variation in premiums across the state is affected by the interaction of market structure, selection, and location.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	To estimate demand elasticity for services affected by Engaged Benefit Design (EBD) based on variable cost sharing to understand the frequency of use for these services.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	Help Coloradans make informed decisions regarding health insurance plans and improve transparency by analyzing the cost of specialty prescription drugs.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	To understand how the prices that insurers pay physicians respond to the public sector's reimbursement rates. By learning about the mechanics of this price-setting in Colorado, NBER can help policymakers to target payment rates more efficiently and thereby improve medical care and lower health care costs.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Vendor		Use CO APCD claims data to build a free mobile platform that allows users to know what they are spending on health care by leveraging information from users' personal finance accounts and data from commercial payers.	De-identified Data Set	N/A aggregated de-identified data only	Yes
Academic/ Researcher	Yes	Reduce prescription drug abuse by identifying pharmacy benefit design across Medicaid populations.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit		To analyze the impact of a bundled palliative care service on patient medical and behavioral health services utilization and total costs of care in order to improve care and reduce costs for patients that receive palliative care.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes

Stakeholder / Requestor	Scholarship	Purpose	Type of Request	HIPAA Regulation Pursuant to Approval	DUA in Place
Non-profit	Yes	Help minimize the cost of physical therapy and other physical rehab services that patients would pay out-of-pocket.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	To 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.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	Reduce readmissions by determining whether there is an association between hospitals' scores on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) discharge information and care transition questions and all cause 30-day hospital readmission rates.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Vendor		To provide payers and providers with actionable analytics in order to improve care coordination for the Colorado residents involved in the Colorado Comprehensive Primary Care Initiative.	Identifiable Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Provider		Develop pricing bundles for a colonoscopy episode of care in order to lower health care costs without sacrificing quality of service.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Vendor		To determine a reasonable and customary fee for medical services as it relates to auto accidents in Colorado involving injuries, in order to avoid exorbitant medical fees.	Custom Report	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher		Financially analyze, evaluate, and model claims data to support the Colorado SIM project, focusing on the integration of behavioral health care services with physical health care services in primary care settings.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Non-profit	Yes	Increase transparency about actual costs of breast cancer-related health care by evaluating geographic, facility-based, and payment-source variances.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes

Stakeholder / Requestor	Scholarship	Purpose	Type of Request	HIPAA Regulation Pursuant to Approval	DUA in Place
Academic/ Researcher	Yes	Work to improve clinical outcomes by exploring the implications of using the ACC to serve the State's Medicaid clients by examining Medicaid clients with both physical and behavioral health conditions.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	Improve patient safety by finding ways to increase the use of perioperative, non-opioid painkillers and reduce opioid prescriptions post-discharge.	Identifiable Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes
Academic/ Researcher	Yes	Compare readmitted vs. non-readmitted patients who have common vascular procedures to determine rates of readmission, costs of care, and risk factors in order to propose a more robust outpatient care model.	Limited Data Set	Data released under multi-party business associate agreements consistent with HITECH	Yes