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2020 COLORADO ALL PAYER CLAIMS DATABASE ANNUAL REPORT



CENTER FOR IMPROVING
VALUE IN HEALTH CARE
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Introduction

Data in the Colorado All Payer Claims Database (CO APCD) is more credible, comprehensive, and actionable than ever before. Center for Improving Value in Health Care (CIVHC), administrator of the CO APCD, has worked steadily and conscientiously to strengthen the quality and completeness of the CO APCD while at the same time providing meaningful analytics to Change Agents across Colorado and the nation.

A requirement of [Colorado Statute 25.5-1-204](#), this report details the administration of the CO APCD between July 1, 2019 and June 30, 2020, CIVHC's fiscal year. Those twelve months were marked by growth and innovation as well as organizational and analytic capacity building, stemming from the stability and security provided by dollars allocated by the Colorado General Assembly during the 2019 legislative session.

Who is CIVHC?

CIVHC is an objective, not-for-profit organization. Through services, health data, and analytics, we partner with Change Agents to drive towards the Triple Aim of better health, better care and lower health care costs for all Coloradans. We believe that together we can alter the trajectory of health care and we are privileged to serve those striving toward a better health system for us all.

Change Agent

Individual, community, or organization working to lower costs, improve care, and striving toward 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 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 continually grows with between millions of claims submitted by payers each month, reflecting over 4.5 million lives. It is the only claims repository in the state that represents the vast majority of insured lives in Colorado, with more than eight years of data from commercial health insurance payers, Medicaid, and Medicare. These claims provide valuable insights about the health of Coloradans, how Colorado is paying for and using health care, and the quality of the care being delivered. CIVHC makes this information available publicly on their website, civhc.org, and non-publicly via a data release process to consumers, providers, employers, payers, researchers, state agencies, advocacy organizations, nonprofits, and others working to improve health and health care, and lower costs for Colorado residents.

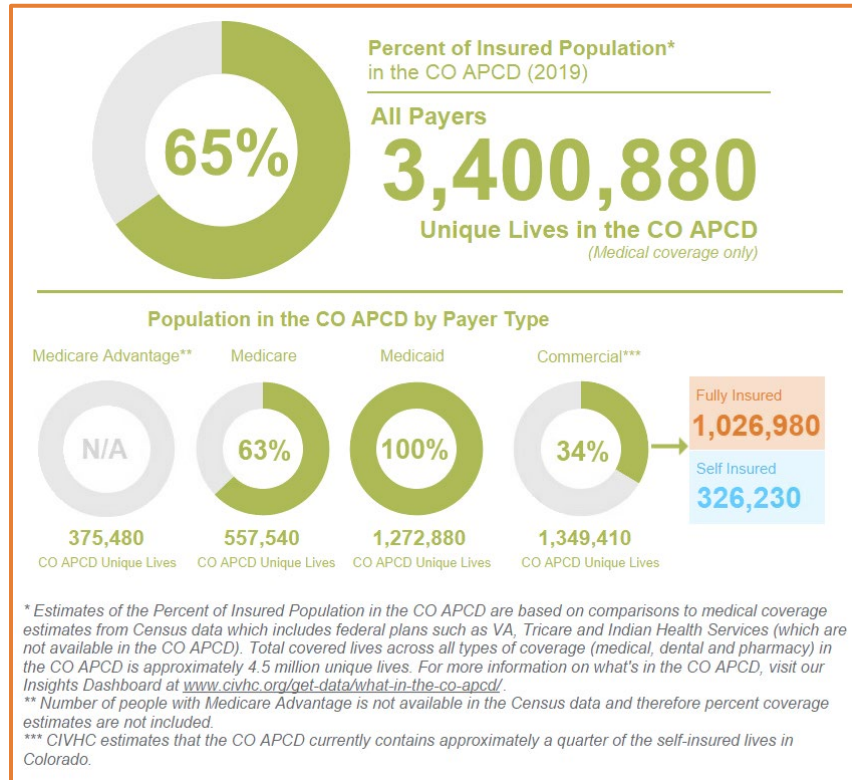
CO APCD Insights Dashboard

The [CO APCD Insights Dashboard](#) can help users understand the types of claims that are available and the percentage of the population that is represented in the CO APCD by county and across the state. Also included in the Dashboard is information about trends in the number of claims with behavioral health services that are in the data warehouse.

Contents of the CO APCD

The CO APCD contains over 900 million claims for approximately 65 percent of insured lives in Colorado, with information from 42 commercial health insurance plans, including Medicare Advantage as well as voluntarily submitted Employee Retirement Income Security Act (ERISA) and mandated non-ERISA self-insured employer plans, Medicaid, and Medicare Fee-

for-Service (FFS) claims. The CO APCD does not contain claims for people covered by Federal health insurance programs such as the Veterans Administration, TRICARE federal employees, or Indian Health Services, and does not include information for uninsured Coloradans.



Due to a 2016 ruling by the United States Supreme Court, states cannot mandate submission of claims data from self-insured Employee Retirement Income Security Act (ERISA) plans to APCDs. Self-insured claims are estimated to represent half of the total commercially insured lives in Colorado and CIVHC estimates that the CO APCD currently contains approximately a quarter of those lives. (More information about self-insured claims in the CO APCD is available later in the report.)

Getting Claims into the CO APCD

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.

Claims Life-Cycle Through the CO APCD



How the CO APCD is Used

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

Public Data Releases

Increasing access to transparent health care data for all stakeholders is foundational to the original legislative vision of the CO APCD, CIVHC's mission, and to Colorado's ability to make informed decisions that will have lasting benefit to the state. Making public analyses and interactive tools available on civhc.org is one of the methods CIVHC employs to bring transparency to the health care marketplace.

Non-Public Data Releases

In addition to making public information available, 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 CO APCD regulations, as well as adhere to federal privacy and anti-trust laws.

CO APCD Scholarship

The Colorado General Assembly established the CO APCD Scholarship Fund in 2014, allocating funds to offset the cost of data for requestors with limited resources. HCPF administered the funds in conjunction with a group of members from the [CO APCD Advisory Committee](#). Requestors are required to meet specific criteria in order to be considered for the scholarship. *(More information about the CO APCD Scholarship in FY2019-2020 is available later in the report.)*

Administering the CO APCD in FY2019-2020

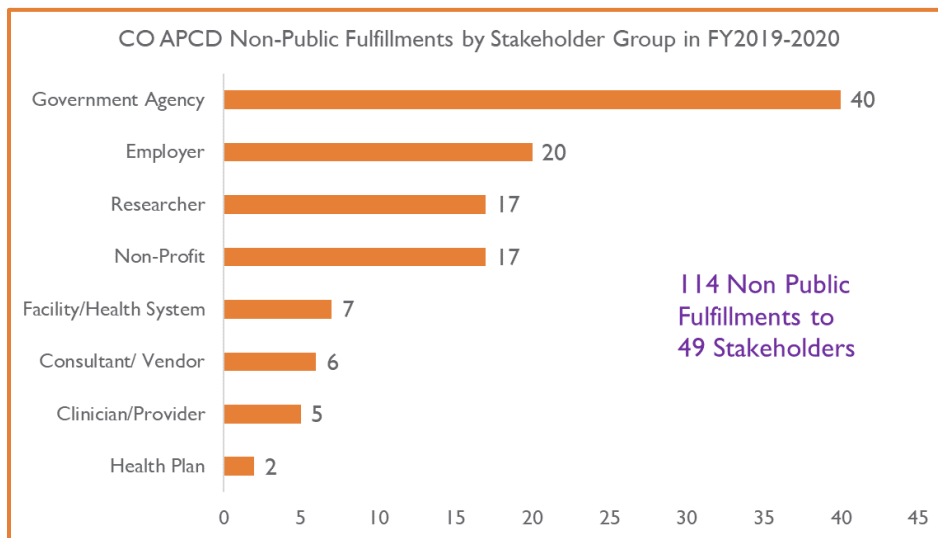
It is fitting that the tenth anniversary year of the [CO APCD enabling legislation](#) contains more achievements than all of the previous years combined. Some are small, some are large, but all demonstrate how CIVHC and the CO APCD have grown to be integral to improving lives across the state and nation. In a year filled with many unanticipated challenges, CIVHC partners and staff rose to meet each while embodying the spirit of commitment, collaboration, and grit that exemplifies Colorado.

FY2019-2020 began with the launch of two contracts tied to funding from the state, one of which was the single largest contract in CIVHC history. The scope and complexity of these contracts required cross-team coordination and collaboration on a scale not yet seen at the organization. The contracts enabled CIVHC to dedicate new resources to researching and implementing groundbreaking analytics and further advancing data quality processes that would benefit all stakeholders. Concurrently, the CIVHC team continued established operations of non-public CO APCD data release to qualified stakeholders and public release of actionable information via civhc.org.

In the spring, CIVHC stepped forward to support state agencies, providers, facilities, and local public health officials during the onset and subsequent months of the COVID-19 pandemic. Analyses using CO APCD data helped identify where [populations at risk for serious illness](#) were located across Colorado, investigated the potential financial [impact of the temporary cessation of elective procedures](#) on providers, and highlighted important trends in the use of [telehealth services](#) before and after the onset of the pandemic. Alignment with the state and community partners was, and continues to be, crucial as the vaccine rollout continues, stakeholders work to address inequities in the health care system, and we strive to build a new normal that works for us all.

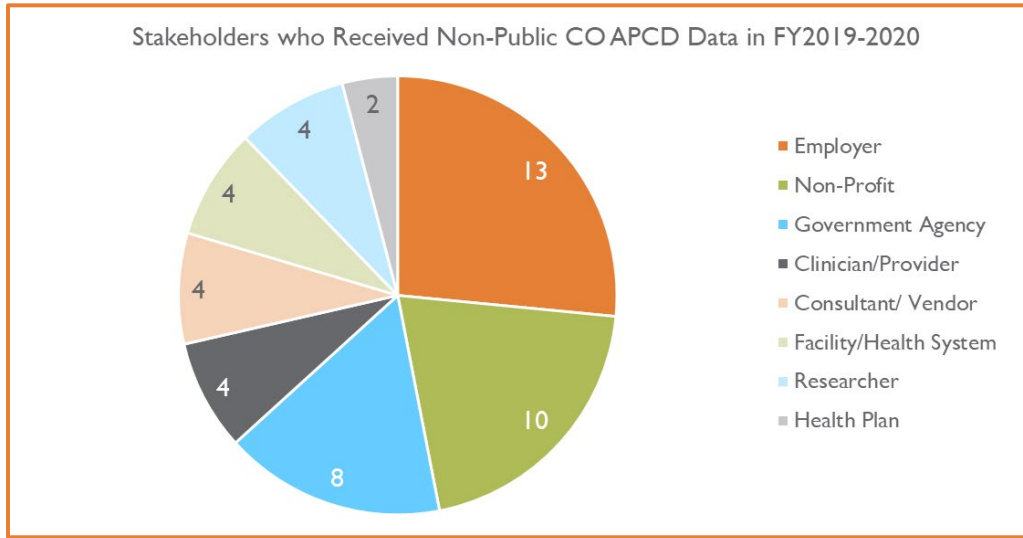
Increasing Access to the CO APCD

In FY2019-2020, CIVHC provided 114 fulfillments of non-public CO APCD data to 49 different stakeholder organizations. In some cases, these organizations received multiple data fulfillments for different projects. For example, HCPF received data for several projects, ranging from an analysis of opioid prescribing patterns to an investigation of low value care services. It is also important to note that some requestors have subscriptions for quarterly data extracts or their projects require multiple fulfillments throughout the year, thus increasing the number of non-public data releases while keeping the number of requesting organizations stable. Please see [Appendix A](#) for a list of all non-public data releases in FY2019-2020.

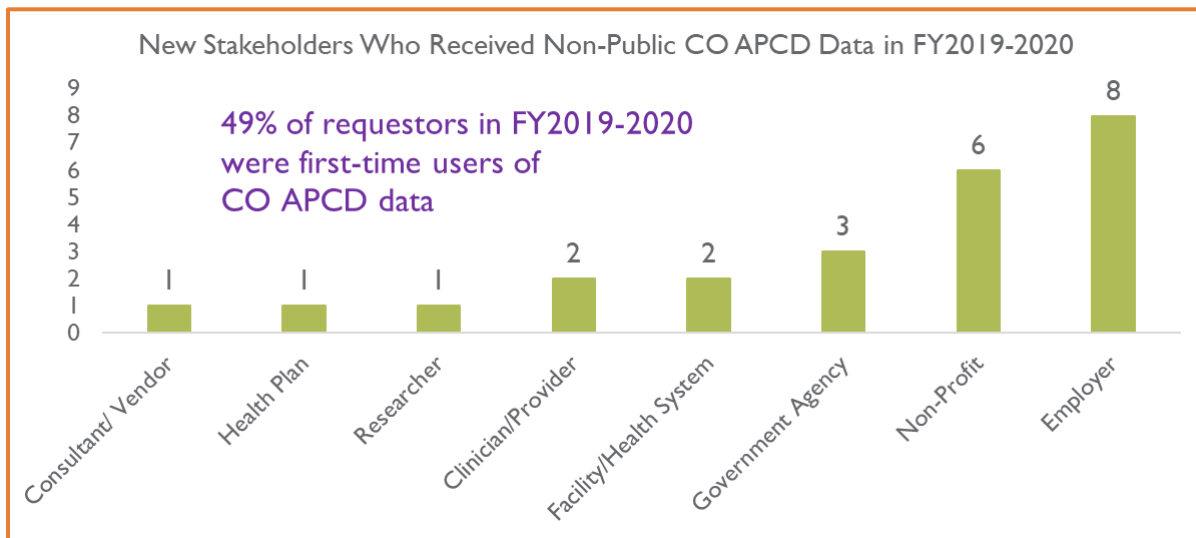


Diversity of CO APCD Data Requestors

Stakeholders who received CO APCD data during FY2019-2020 span the spectrum from digital health innovators to traditional researchers, from major health plans to rural hospitals. For the first time, more employers than any other stakeholder group engaged with non-public CO APCD data, followed closely by non-profit groups/advocacy organizations and government agencies. This variety of users speaks to the relevance and versatility of the data and CIVHC’s continual commitment to determine how best to meet the needs of stakeholders.

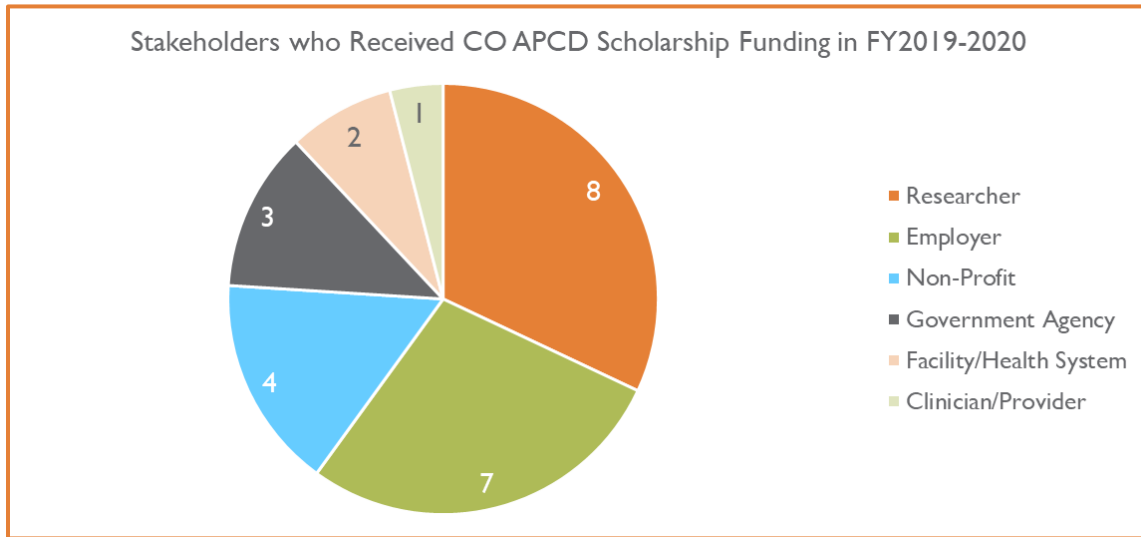


In FY FY2019-2020, 49 percent of non-public releases were provided to new requestors, and employers topped the list of new stakeholder types receiving CO APCD data. This is due, in part, to partnerships established with purchasing alliances across the state, with whom CIVHC develops standard reports for employers on a variety of topics including Medicare-reference based price comparisons, low value care, and potentially avoidable ED visits. CIVHC worked with multiple employers to develop and iterate on the reports which they are using to help them negotiate lower rates with providers and improve care for their employees.



CO APCD Scholarship Recipients

Including the 24 requests approved in FY2019-2020, since inception the CO APCD Scholarship Fund has enabled 134 projects to move forward that might not have been possible without assistance. Previous analyses supported by the Scholarship include [Cost Savings from Medically-Tailored Meals for the Chronically Ill](#) from Project Angel Heart, [Emergency Department Utilization](#) by Colorado Children's Health Care Access Program, and [Population Surveillance of Adolescents and Adults with Congenital Heart Disease](#) led by researchers at the University of Colorado School of Public Health. Additional information about Scholarship projects prior to FY2019-2020 can be found in the searchable [Change Agent Index](#).



The types of stakeholders who receive funding has shifted over the years as knowledge of the utility and value of the CO APCD has spread. At the beginning, the majority of requestors originated at state or government agencies and now, six years after inception, the largest stakeholder group among recipients is researchers, followed by employers.

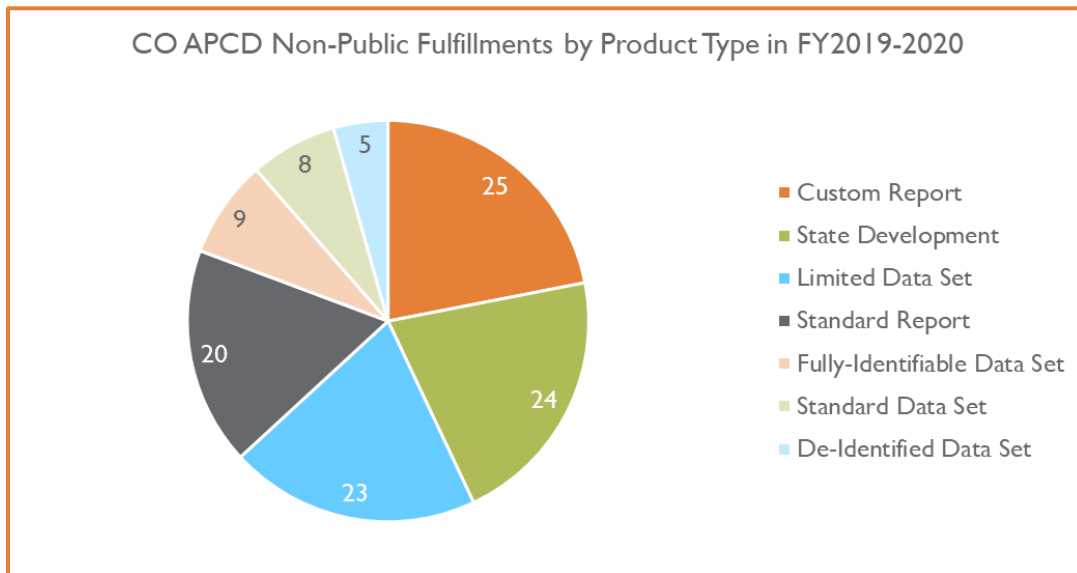
FY2019-2020 CO APCD Scholarship Recipients	
9Health	CU Denver
Chafee Community Foundation	CU School of Medicine - Dept. of Neurology
CO Cancer Coalition Lung Cancer Screening Task Force	CU School of Medicine - Geriatric Medicine
Colorado Consortium for Prescription Drug Abuse and Prevention	Garfield County
Colorado Department of Labor and Employment	Local First
Colorado Department of Public Health and Environment	Mesa County Public Health
Colorado Department of Human Services	Northern Colorado Consortium: Colorado Business Group on Health
CU Anschutz	Northern Colorado Consortium: Larimer County
CU Anschutz - Department of Orthopedics	Northern Colorado Consortium: SOCI
CU Anschutz - Division of Health Care Policy and Research	Peak Health Alliance
CU Anschutz - Division of Pulmonary Services and Critical Care	University of Colorado Pediatrics and Children's Hospital
CU Colorado Clinical and Transitional Sciences Institute	University of Denver

CO APCD Scholarship and COVID-19

Funding for the CO APCD Scholarship was eliminated for the State FY 2020-2021 due to the economic downturn wrought by the COVID-19 pandemic. This has impacted many organizations who would have normally accessed CO APCD data for projects to help improve the lives of Coloradans. CIVHC recognized this strain and wanted to ensure we continue supporting these stakeholders with data and analytics from the CO APCD. As a result, CIVHC developed an initiative that provides discounted access to data for organizations who may not have the ability to bear the full data licensing costs. CIVHC plans to provide this discount as long as we have the financial ability to do so, and requests early in the fiscal year are encouraged. For more information, please visit the [Financial Assistance Initiative](#) page on civhc.org or email ColoradoAPCD@civhc.org.

CO APCD Data for All User Levels

There are several ways non-public CO APCD data is provided, depending on the question the requestor is hoping to answer and their sophistication with claims data analysis. For stakeholders who would like CIVHC to deliver the data in a business intelligence or data visualization tool like Tableau or Excel, Custom and Standard Reports are ideal. When partners are interested in performing their own analyses using tools of their choosing and have a strong analysis background, CIVHC provides them with a Data Set. Depending on the level of personal health information (PHI) required, requestors receive a De-Identified, Limited, or Fully Identifiable Data Set. Every request containing any element of PHI is reviewed in detail by the Data Release and Review Committee to ensure they meet all state and federal privacy regulations prior to moving into production. Custom Reports and Limited Data Sets remain the most requested type of non-public release outside of the items developed for state contracts. These items range from data sets to custom reports and are classified differently to facilitate internal project management.



The analyses developed under the contracts for the state were ambitious, wide ranging, and enabled CIVHC to add new analytic methodologies, expand our capabilities, and fortify our ability to better serve all stakeholders. They supported creation of new analytics like the [Low Value Care in Colorado](#) investigation and specific analyses to help employer alliances lower

costs like the [Medicare Reference-Based Price](#) report. Additionally, CIVHC was able to build new and greatly enhanced data quality improvement measures and protocols which enable CIVHC to continue to increase the value and use of the CO APCD.

Public Releases of CO APCD Data

Public releases of CO APCD data are used widely in Colorado and across the nation with analyses frequently making local and national headlines. In FY2019-2020, CIVHC published 20 public reports featuring CO APCD data to inform the needs of stakeholders. In the summer of 2019, the first iteration of the [quality measures](#) required to obtain Phase III CMS Qualified Entity certification was published, [enabling release of Medicare Fee for Service data](#) in circumstances beyond those allowed by the State Agency Request Program. In the fall of 2019, the interactive report for Medicare [reference-based pricing](#) was released with a data set available for download and an infographic. We broke new ground in March of 2020 and became one of only a few states to release information on Low Value Care through a [white paper](#) and accompanying infographic.

In the late spring and early summer our attention turned to supporting those working to address the COVID-19 pandemic as we released a [webpage](#) dedicated to information and analyses surrounding the novel coronavirus and those it impacted. At the end of the fiscal year, we updated our [Shop for Care](#) tool with 2018 data as well as new facilities, quality information, price breakouts, and new procedures including hospital and outpatient procedures like hysterectomies and colorectal resections. We also rolled out the soft launch of the interactive [Community Dashboard](#) to get feedback from stakeholders before finalizing.

CO APCD Data to Advance Palliative Care

CIVHC released two Data Bytes in FY2019-2020 that focused on aspects of palliative care. The first analyzed the volume and total amount paid for respite care claims in Colorado from 2012 to 2018 across Medicare Advantage, Medicaid, and Commercial payers. (Download the data set [here](#).) The second sought to understand trends in provider use of a new advance care planning CPT code implemented in 2016 across Medicare Advantage, Medicaid, and Commercial payers. (Download the data set [here](#).) These two publications mark some of the first applications of CO APCD data to inform improving access to palliative care services.

Data Byte Program

To provide access to CO APCD data to stakeholders who need a small amount of information and do not have the resources for a full non-public release, CIVHC established a Data Byte program whereby analyses outside CIVHC's regular public reporting roadmap are developed and made public to support the needs of policymakers, members of the press, and other organizations seeking to advance health and health care. In FY2019-2020 CIVHC released five Data Bytes on a variety of topics listed below that were used by a number of advocacy organizations, journalists, and legislators. To request a Data Byte, please email info@civhc.org.

Publications Featuring CO APCD Data in FY2019-2020	
Interactive Reports, Infographics, and Data Sets	Spot Analyses and White Papers
Emergency Department Use for Mental Health Reasons Infographic and Data Set	Low Value Care in Colorado Report
Low Value Care in Colorado Infographic	Quality Measures: Diabetes A1c Testing and Breast Cancer Screening Report*
Potential Impact of COVID-19 Temporary Cessation of Elective Procedures Data Set	Data Bytes
Populations at Risk for Serious Illness from COVID-19	Advance Care Planning Code Volumes
Shop for Care Imaging Procedures Interactive Report and Data Set	Legislative District Medical and Pharmacy Total Spend, 2017 & 2018
Shop for Care Procedure Episodes Interactive Report and Data Set	Low Birthweight and Birth Outcomes
Quality Measures: Diabetes A1c Testing and Breast Cancer Screening Data Set*	Respite Care Volume and Total Spend in CO
Percent Covered Lives by Payer Type Data Set	Emergency Department Facility Payments
Medicare Reference-Based Price Interactive Report, Infographic, and Data Set	<p><i>*This was updated in 2020 as part of the requirements to maintain Qualified Entity status, the documents on civhc.org at the time this report was submitted reflect that update.</i></p>
Telehealth Services Utilization	
Community Dashboard	

CO APCD Data Supports Policy and Community Change Agents

The stewardship of actionable, transparent health care data – a cornerstone of our organizational identity – is baked into all of CIVHC’s work and is foundational to advancing our mission to help Change Agents improve the lives of Coloradans. Over the years we have crafted a multifaceted strategy to increase not only health care data transparency but utilization of the data to improve care while lowering costs. This strategy allowed for:

- supporting legislation through evidence and as a source of information to implement bills signed into law;
- incorporating more data into the CO APCD, thereby increasing the ability to capture a complete picture of the health care system in Colorado;
- enhancing the tools and proficiencies of CIVHC and the CO APCD to allow for sophisticated analyses that slice deep into the most difficult problems in health care; and
- ensuring that CO APCD data is available to all stakeholders, including consumers, by releasing information publicly via civhc.org.

CO APCD Data to Support Legislation

CIVHC provided information for a number of pieces of legislation in the 2020 session and gave background testimony for SB 20-107 regarding Drug Production Cost Transparency. Unfortunately, the session was derailed by the COVID-19 pandemic and many bills were put on hold. During the 2019 session, the CO APCD was written into two pieces of legislation – [Out](#)

of [Network Billing HB 19-1174](#) and [Primary Care Investment HB 19-1233](#) – as a source of information for implementation. Both of the bills passed into law and that same year, information from the CO APCD was released in support.

For the [Out of Network](#) legislation, CIVHC worked hand in hand with providers, payers, and the Division of Insurance (DOI) to determine methodology and analytics used to define out of network payments for [emergency services](#) and [professional fees](#), including anesthesiology. This information helps protect patients from surprise bills and the fee schedules contain provider reimbursement requirements for listed services.

The [Primary Care and Payment Reform Collaborative](#) was established by HB 19-1233 to increase investments in primary care in Colorado and ultimately improve access and lower costs. The Collaborative is using [analyses](#) from the CO APCD, including information on alternative payment models (APM) and primary care spending, to make recommendations on reimbursements for primary care services.

Helping Employers Contain Costs

As part of Colorado's efforts to save people money on health care, the Colorado General Assembly passed [SB 19-004](#), which broadened the rules governing who can create a bargaining collective in the state. Seeing an opportunity and armed with CO APCD data, employers and consumers in the high country formed the Peak Health Alliance and became the first to begin negotiating with providers in their area. Additional employer alliances and groups doing similar work have formed since then, and data from the CO APCD has been critical to their implementation and success. This work led to employers being not only the most represented stakeholder group receiving CO APCD data in FY2019-2020 but also being the group with the highest number of new requestors engaging with CIVHC.

Employers have also been early beneficiaries of our contracted work with the state and have been benefitting from underlying data analytics developed through the state contract. Standard Reports (analyses with a fixed methodology and menu of data elements) focused on cost-reduction strategies like low value care, reference-based pricing as a percent of Medicare, potentially avoidable ED visits, and episodes of care for common procedures have been developed specifically with employers in mind and have the benefits of a low price point and a quick turn around time. CIVHC plans to continue iteration on these reports to make them valuable to different stakeholder groups including payers, providers and facilities.

CO APCD Data to Assist with COVID-19

As Colorado and the rest of the world grappled with the outbreak of COVID-19 in early 2020, CIVHC sought ways to support the efforts of stakeholders addressing the pandemic on the ground. We began collaborating with partners and brainstorming how CO APCD data could inform the response to the crisis. After consulting with the DOI, the Colorado Department of Public Health and Environment (CDPHE), the Office of eHealth Innovation (OeHI), the [CIVHC Board of Directors](#), the [CO APCD Advisory Committee](#), and other partners, CIVHC began work on analyses designed to help understand, plan for, and minimize the impact of the virus on Coloradans.

The first analysis, [Populations at Risk for Serious Illness from COVID-19](#), was published mid-May and helped identify which areas of Colorado might need additional support for future waves of the virus. This analysis was later used by the Governor's Expert Emergency Epidemic Response Committee (GEEERC) to help plan for vaccine distribution. The [Potential Impact of Temporary Cessation of Elective Surgery](#) initial data set was published weeks later and delved into data for the first six months of 2018 and 2019 to estimate the financial impact that cessation periods may have had on payments to providers and utilization. This analysis was later updated in July and re-released with an accompanying infographic. The third COVID-19 analysis released was the [Telehealth Services Utilization Analysis](#) which is being used by the state, providers, and others to understand the use of telehealth services prior to and after the onset of the pandemic. The interactive analysis is updated regularly to track trends in continued use of telehealth services and to understand where telehealth is being accessed, for what reasons, and by the which provider types.

Advance Care Planning in the Time of COVID-19
The COVID-19 pandemic brought together many stakeholders focused on crisis palliative care as facilities began treating patients and needed to understand their wishes during the process. CIVHC collaborated with both the Colorado Healthcare Ethics Resource (CHER) and the GEEERC to support their efforts and compiled Advance Care Planning resources with COVID-19 in mind that are available through a [dedicated page](#) on civhc.org.

The list of potential COVID-19 analyses using CO APCD data, including future research that can help us understand the impact of the pandemic on long-term health outcomes, cost and utilization, can be found in [Appendix B](#).

New CO APCD Data to Advance Affordability

Assuming the administration of a state resource like the CO APCD is a tremendous honor and during our tenure, CIVHC has sought to provide Colorado with the most comprehensive, credible, and reliable claims data possible with the resources available. Through lessons learned, course corrections, and sacrifices, this goal has not wavered. In order to improve quality and dependability and reduce costs, CIVHC made the decision to transition management of the CO APCD data warehouse to the [Human Resources Services Institute](#) (HSRI) and the non-partisan and objective research organization, [NORC](#) at the University of Chicago. Since this transition completed in July 2017, CIVHC and our partners have worked to improve the CO APCD while also maintaining financial sustainability.

New Data to Complete the Picture of Health Care in Colorado

In September 2019, CIVHC began collecting annual alternative payment models (APM) and drug rebate files into the CO APCD after adding these elements to the [Data Submission Guide](#) (DSG) through the Executive Director Rule Change Process the previous year. An additional Rule Change promulgated in FY2019-2020 refined the APM submission guidelines to align with the definition of primary care based on the [Primary Care and Payment Reform Collaborative](#) recommendations. Colorado is one of the few states in the nation that is collecting information on APMs and drug rebates. The information they both provide adds to the depth of the CO APCD and affords an important glimpse into previously unexplored aspects of the health care system.

Alternative Payment Models

The health care delivery system has been gradually shifting away from fee-for-service reimbursement models in response to the need for more affordable care options. As these new APM efforts expanded, it became clear that it would be valuable to include this information in the CO APCD to evaluate the impact they were having on quality and cost of care in Colorado. Over the last two years, CIVHC and the DOI have worked with submitters to transition the APM categories to nationally known categories and definitions for greater uniformity in collecting the claims and dollar amounts for each payer and well as to allow for consistency in reporting. Also submitted in the claims is information whether the payer is using quality metrics as part of the APM and the metric(s) being used.

CIVHC is in the process of learning the different ways the APM data can be used and what insights it can shed on cost of care in Colorado. The DOI and Primary Care and Payment Reform Collaborative receive information specific to APM and non-APM payments for primary care. With the approved changes for DSG 12, which will be effective in March 2021 with files due in September, carriers will be also be required to distinguish between primary care and other types of services, allowing for more analyses and to determine adherence to Colorado regulations surrounding Primary Care.

Drug Rebates

Prescription drugs are one of the biggest drivers of rising health care costs in the nation and the system through which they move from manufacturer to patient has been historically opaque. Collecting drug rebate information into the CO APCD allows Colorado to take the first steps in understanding how dollars are exchanged in the system and whether (or not) any savings from rebates are being passed along to patients. When submissions under DSG 12 begin coming into the CO APCD in September of 2021, new rebate data being submitted will include information about Value Based Purchasing Contracts between payers and drug manufacturers, which have quality metrics attached to the cost of each drug and are usually used for low-volume/ultra-high-cost prescriptions. The new data will indicate the dollar amounts tied up in these contracts, which drugs have them, and enable CIVHC to investigate the distribution of specialty vs brand name vs generic prescriptions.

Reducing Prescription Drug Costs in Colorado

The Colorado Department of Health Care Policy and Financing released the second edition of the [Reducing Prescription Drug Costs in Colorado Report](#) in January 2021. The report is a follow up to the initial report published in 2019 and outlines strategies for Colorado to reduce the cost of prescription drugs - one of the major drivers of rising health care prices. The second edition of the report includes the first public release of [drug rebate information](#) collected in the CO APCD.

Self-insured Employer Information

Supreme Court Ruling and 2020 No Surprises Act
On March 1, 2016, the United States Supreme Court determined that states could not mandate the submission of health care claims from ERISA-based self-insured employers to APCDs. The ruling in the [Gobeille vs. Liberty Mutual](#) case held that the differing APCD submission

requirements across states could create an excessive administrative burden to employee welfare benefit plans under ERISA and because of that, the state’s submission requirements were pre-empted. While the Supreme Court pre-empted states’ ability to mandate claims submission for ERISA-based self-insured plans, it also left the door open for a uniform national solution that could overcome the administrative burden argument. The decision indicates that a uniform reporting format developed by the Department of Labor could eliminate the issues that prompted the state law pre-emption.

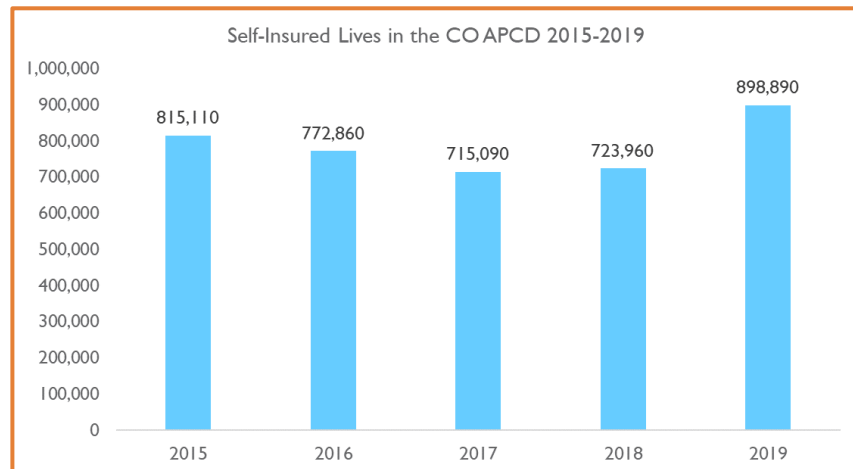
The December 2020 Consolidated Appropriations Act that included the second round of federal COVID-19 relief funding also included the No Surprises Act legislation designed, in part, to provide patients with protection from surprise medical bills. [Section 115](#) of the No Surprises Act directs that a standardized data format be established for the collection of medical, pharmacy, and dental claims as well as eligibility and provider files. While there was no explicit mention of the Gobeille ruling in the No Surprises Act, the creation of a common data layout by the Department of Labor would be the first step in overcoming the administrative burden concern central to that case. There is also a provision for grants to be awarded to each state to either create or improve an APCD, with the potential for states’ applications to be prioritized if they will work toward implementing collection of self-insured employer information in the standardized data format once established.

Common Data Layout
 Following the Gobeille ruling in 2016, the [National Association of Health Data Organizations](#) (NAHDO) and the [APCD Council](#) began collaborating with CIVHC and other partners nationwide to develop the [Common Data Layout](#) (CDL). In FY2019-2020, changes were made to DSG 11 in order to ensure that CO APCD data submission to the aligns with the CDL.

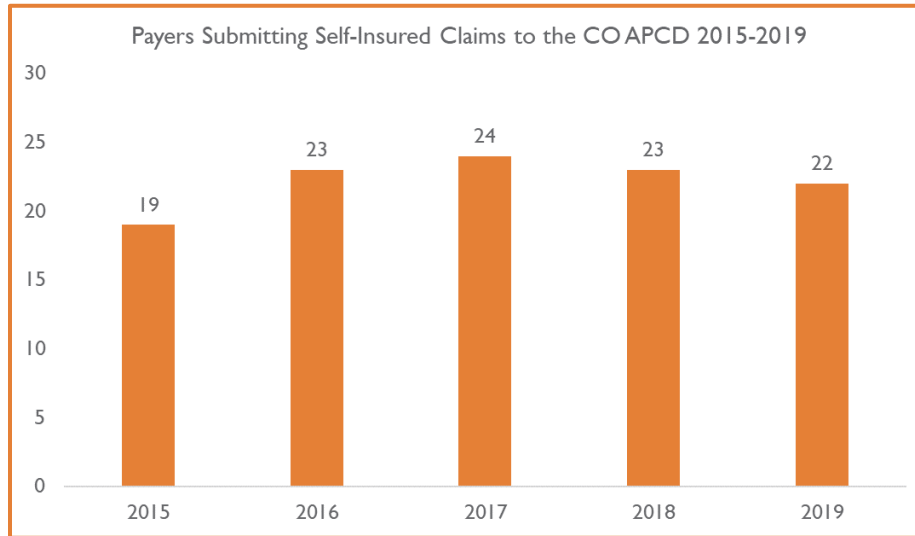
As it is unlikely that the original Supreme Court decision will be overturned, the incremental steps taken in the No Surprises Act begin the journey of moving toward more comprehensive collection of ERISA-based self-insured employer claims in APCDs across the nation. The process is likely to be slow and will necessitate collaboration with payers as well as the Department of Labor to complete and finalize a standardized data format.

Self-insured Employers in the CO APCD

The Gobeille ruling did not impact collection of data from non-ERISA self-insured employers or those ERISA-based employers who chose to voluntarily submit claims to APCDs. In July 2015, CIVHC and HCPF promulgated a rule change that required self-insured employers to submit to the CO APCD. While the rule was amended to exclude ERISA employers in



accordance with the Supreme Court decision the following March, CIVHC continues to collect non-ERISA self-insured employer claims and conducts robust outreach to encourage voluntary submission from the ERISA employers.



As part of this outreach, we have partnered with different employer groups to ensure that business owners and operators [understand how](#) CO APCD data can help them lower costs for their employees while continuing to offer high value care. A number of these groups created the employer alliances and bargaining collectives mentioned earlier in this report that have negotiated ground-breaking contracts with facilities for their employees. The majority of self-funded employers that CIVHC has engaged are in favor of voluntarily submitting their claims to the CO APCD and understand how having benchmarking data to compare their costs to others in their region provides them valuable information to use when it comes time to renew benefits and make changes to health plan designs.

In some cases, the obstacle to submission to the CO APCD is not the employer but the third-party administrator (TPA) or administrative service organization (ASO) who processes the claims on their behalf. Submission of claims to an APCD may not be in the service contract between the employer and the ASO/TPA, and may in fact be prohibited in their provider network contracts. Additionally, there are no legal requirements for ASOs and TPAs to submit claims on behalf of the employers, even if it is requested. CIVHC continues to work with employers to find ways to provide them with as much cost and quality information as possible for their region or county, even if it is not specific to their employees.

Identifying Self-insured Employers in Colorado

The state does not collect information about employers who choose to self-insure their health care coverage in the same way they do for those who self-insure [Worker's Compensation Insurance](#). This makes it challenging to identify self-insured employers, much less those who are ERISA or non-ERISA, for targeted outreach regarding submission to the CO APCD.

Processing and Analytic Improvements

In FY2019-2020, CIVHC was able to invest time to expanding data quality and analytic processes due to funding support from the General Assembly. Included in the state contract was development of detailed plans designed to monitor data quality and investigate, communicate and resolve data quality issues. The CIVHC Data Quality team collaborated with HSRI to create detailed [workplans](#) and better define the [analytic process](#) for stakeholders. They did a comprehensive review of intake validations and made improvements to catch submission issues early in the process.

Inclusion of Non-Binary Option
As part of changes to the DSG in FY2019-2020, a non-binary option was added in the gender field, along with male and female options.

Most significantly, CIVHC was able to open new communication channels with CO APCD data users and submitters, thereby nurturing relationships and building a greater understanding of the intricacies of the CO APCD. Through the Data Users Group and the CO APCD Data Brief, CIVHC shares important information regarding submissions, how the data is processed and how business rules are defined, updates to data discoveries, and how to use the data most effectively. The bi-monthly [CO APCD Data Brief](#) keeps data users up to date on important

Deeper Analyses of Prescription Drug Costs

During FY2019-2020, CIVHC acquired a drug reference file that allows for determination of brand, specialty, and generic drugs as well as identifies therapeutic class. This tool will help to further tease apart the layers of what is driving high prescription costs.

happenings with the data and upcoming CIVHC analytics while the [CO APCD Data User Resources](#) webpage provides a central location for in-depth information as well as materials for the [CO APCD Data User Group](#). In addition to data user support efforts, the CIVHC intake team created a guide to help payers fix processing challenges with claims and worked with them to improve submission of APM files. In fall 2020, a quarterly Payer Forum was launched with key leaders at submitter organizations with the aim of improving CO APCD data quality.

Costs to Administer the CO APCD in FY2019-2020

In 2010, when the General Assembly mandated creating the CO APCD, Colorado wasn't in a position to include a fiscal note to fund the database. In support of creating the database, the Colorado Health Foundation and The Colorado Trust provided essential funding to CIVHC to help implement and develop the CO APCD. The foundations were very clear from the beginning, however, that their financial support would be short term and CIVHC would need to reach a position of CO APCD sustainability without relying on these grant dollars. From 2012 on, CIVHC has worked to bolster funding with income from licensing CO APCD data to requestors as enabled by the [CO APCD Rule](#) as well as through grant-seeking and exploring impact investing.

Data Vendor Transition to Improve Quality of CO APCD

In response to data intake and processing concerns and limitations and contract costs associated with the original data warehouse vendor, as well as the goal to continually improve and enhance the overall value of the underlying data, CIVHC converted to a new data vendor starting in July 2016 with completion in July 2017. Recognizing the need to continually improve

CO APCD data and operations, the CIVHC board finance committee decided to allocate reserves to fund the one-year transition which required payment to not just one, but both vendors. CIVHC worked to secure additional funding streams throughout the vendor transition and in May 2017, and became aware of the opportunity to receive federal funds for the Medicaid-only portion of data warehouse management through the Centers for Medicare & Medicaid Services (CMS) Medicaid 50/50 matching program.

CMS Matching Funds

CIVHC began receiving matching funds from CMS in 2018. In order to be eligible for the 50/50 opportunity, CIVHC was required to obtain half of the requested dollars in state funding. To this end, CIVHC worked with HCPF, the Joint Budget Committee, and legislators to pass [House Bill 18-1327](#), which allows the CO APCD to receive funding from the General Assembly that was not included in the enabling legislation. The annual state funding covers contractual Medicaid-only operations of the database and development and implementation of data literacy initiatives. These dollars are matched each year by CMS. This bill also formalized the grant/scholarship fund to offset data licensing fees for qualifying entities.

Program Related Investment from the Colorado Health Foundation

The ongoing support provided by the CMS 50/50 matching funds is a significant step toward full sustainability for the CO APCD, though it only offsets the Medicaid operations portion of the database administration, and does not cover the cost to intake, process, and house commercial and Medicare data. Additionally, delays in disbursement of the initial CMS 50/50 payments from late 2017 until mid-2018, coupled with challenges regarding data availability and the data vendor transition, created an immediate and short-term need for cash flow in early FY2018-2019. Through a gracious \$2M program-related impact loan from the Colorado Health Foundation, CIVHC was able to sustain operations and restore reserve funds until the state and federal payments were disbursed. The use of these funds not only allowed for a stable operating environment, they also ensured the continuation of many valuable and innovative programs and associated resources.

Support from the Colorado General Assembly

To make up the funding for the commercial and Medicare portions of the CO APCD, CIVHC undertook a multipronged approach, 1) continue to license CO APCD data to requestors; 2) continue applying for local and national grants; and 3) work with HCPF to secure operational funds from the state. As a result of the work with HCPF, the CO APCD was included in the State FY2019-20 Long Bill Budget, providing funding for core operating expenses and additional analytic services for state agencies in FY2019-2020.

The combination of CMS 50/50 funding and generous support from the Colorado General Assembly has succeeded in replacing historical operating grants and cover a good portion of CO APCD operating costs. Moving into FY2020-2021 and the challenges of the pandemic-related economy, CIVHC is managing budgets very tightly to remain above breakeven, to build the investment loan repayment to the Colorado Health Foundation, and maintain necessary operating reserves. We are grateful to the Joint Budget Committee for recognizing the value of the CO APCD and continuing funding at a level to keep it operational.

Additional Avenues for Funding

Efforts to seek local and national grants resulted in CIVHC partnering with Robert Wood Johnson Foundation (RWJF) and AcademyHealth to support the Health Data for Action program. CIVHC helped initiate and develop the plan for the program which aims to provide de-identified data sets to researchers who may have challenges accessing data. The program functions similar to a grant, wherein researchers apply to receive a data set from a national organization and RWJF and AcademyHealth act as conduits to help facilitate access. In FY2019-2020, CIVHC received a \$50,000 grant to help develop the application for the CO APCD data set that is part of the program. Due to COVID-19, the release of the data to approved applicants will not start until the fall of 2021.

90/10 CMS Matching Funding

In 2020, CIVHC and HCPF began working on a proposal for an additional opportunity for the CO APCD to receive additional matching funds from CMS to support Medicaid. In this case, the match is 90/10, with 90 percent coming from CMS and 10 percent from the state. The funds from the 90/10 contract can only be used to support direct Medicaid operations. CIVHC and HCPF learned in fall 2020 that CMS had approved the 90/10 proposal and the contract began January 1, 2021.

The projects included in the 90/10 proposal are some of the most exciting CIVHC has undertaken and have the potential to greatly enhance the quality of care provided to Medicaid patients while reducing costs for the state. They will also improve CIVHC's analytic capabilities as they come to fruition and we learn new lessons about how to use CO APCD data to improve lives throughout Colorado.

All of the projects in the 90/10 will be incorporated into a new Data Mart which will be designed to allow trusted users at HCPF and the DOI to build basic data aggregations and visualizations using approved data set from the CO APCD featuring Medicaid, commercial, and potentially Medicare data. The data set will include information that would enable users to track members over time and across payers as well as generate geographic analyses. Upon the successful implementation of this portion of the project, future plans may include development of a similar portal for other stakeholders.

Once the foundational data set is incorporated into the Data Mart, CIVHC will begin layering in additional levels of functionality and enhancements. The added functionality will include geographic indicators – geocoding – that will allow for linking with outside data sets such as census and social determinants of health information. The enhancements will be comprised of new data sets like one centered on enabling state agencies to find low-cost, high-quality facilities performing specific procedures, and another using Medicare as a reference for benchmarking service pricing, and data about low value care.

FY2019-2020 CO APCD Budget and Expenses

Payers submit eligibility files for everyone they provide coverage to with every submission, resulting in millions of claim submissions collected in the CO APCD monthly. Ongoing infrastructure and data management costs account for over three quarters of all CO APCD annual expenses. Over time, the CO APCD annual budget has increased due to a number of

factors including an increase in data storage costs, data intake and management costs related to more submitters and more claims to process (the entire data warehouse is refreshed every other month), and an increase in volume of public and custom analytics being produced to support the Triple Aim.

FY2019-2020		
Income		
Grants Total		\$5,071,081
State General Fund	\$2,526,847	
CO APCD Scholarship	\$500,000	
State CMS 50-50 FY2019-2020	\$1,009,617	
Federal CMS 50-50 FY2019-2020	\$1,009,617	
Robert Wood Johnson Foundation Health Data for Action Grant	\$25,000	
Earned Revenue Total		\$1,151,685
Patient-Centered Outcomes Research Project	\$158,210	
CO APCD Data Licensing	\$993,475	
Total		\$6,222,766
Expenses		
CO APCD Program		\$5,513,145
Net Income		
FY20 Net Income		\$709,621

**Additional Federal CMS 50-50 catch-up funding of \$226,259 was received for FY2018-FY2019*

CO APCD Data Licensing Fees

CIVHC works to increase access to data sets and standard/custom reports from the CO APCD to advance the Triple Aim. In order to do that, we use a data licensing fee formula that enables us to cover our costs while providing high value, competitively priced data and other information products.

Estimated Pricing by Product Type:	
	Range of Fees*
Standard Reports	\$500-\$7,000
Custom Reports	\$1,500 - \$20,000
Standard De-Identified Data Sets	\$13,000-\$25,000
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

**Fee ranges reflect estimated costs. The actual data licensing fee will be determined by the scope of each request.*

Factors That Go into Data Access Fees	
Indirect costs (including legal fees)	Number of unique and specific data elements
Labor costs/time required (analysts, health care data consultants, project managers, etc.)	Output type (Tableau, Excel, etc.)
Any additional professional services/consultation requested	

Building a New Normal

It is impossible to look at the year contained between July 2019 and June 2020 without a stark line appearing in March, marking the onset of COVID-19. The months that followed were some of the most turbulent in recent memory, with our health care system facing unprecedented strain and fault lines of systematic racism and resulting health inequities being laid bare. Most of the lessons of this year are still being learned and it will likely be longer before they are fully understood. However, one thing has remained constant throughout: we are stronger together.

CIVHC is dedicated to working with our current partners and fostering new collaborations in order to reduce the barriers to crucial health care information, advance health care affordability, and improve health equity. More importantly, we are committed to helping build a new normal that works for every Coloradan, especially the countless thousands on the margins whose stories have yet to be told.

Reducing Barriers to Accessing CO APCD Data

Financial Assistance Initiative

CIVHC values our stakeholders and want to ensure we are able to continue supporting them with data and analytics from the CO APCD. The financial impact of the pandemic is severe, and CIVHC understands that these organizations need help now more than ever. With the elimination of the CO APCD Scholarship Fund for the State FY2020-2021, CIVHC created a Financial Assistance Initiative to provide discounted access to data for organizations that may not have the ability to bear the full data licensing costs, for projects that focus on understanding and improving health care affordability for communities within Colorado. We will provide this discount as long as we have the financial ability to do so, and requests early in the fiscal year are encouraged. For more information, please visit the [Financial Assistance Initiative](#) page on civhc.org or email ColoradoAPCD@civhc.org.

Standard Data Sets

CIVHC began developing Standard De-Identified Data Sets in FY2019-2020 as alternatives to the more complicated custom releases that are usually requested. Similar in concept to the Standard Reports being developed with the purchasing alliances, Standard Data Sets are files with pre-defined data elements and no customization. They are best suited to requestors with advanced analytic capabilities and the capacity to receive and store large files while ensuring proper security and data safety protocols. Four Data Sets are available with different combinations of data fields for different target audiences. For more information please visit the [Standard Data Set](#) page on civhc.org or email ColoradoAPCD@civhc.org.

Demographics that Impact Health Equity

Strengthening Collection of Race and Ethnicity Information

The health system has often been stymied by the difficulty of collecting demographic and socioeconomic information about patients, despite these being consistent factors in population health and health inequities. Fields in the claims designed to capture race and ethnicity data are frequently left blank or filled in arbitrarily, leading to inaccurate or missing information. Because of the inconsistent nature of the reporting, CIVHC has no way to determine if the fields are blank because the payers are not collecting the data at enrollment or the patients do not wish to submit it. As part of the changes proposed to DSG 12 in FY2020-2021, CIVHC is including a differentiator between the two as a first step in assessing the completeness of the race and ethnicity data coming into the CO APCD.

Race and Ethnicity Data is Fraught

It is vital that providers, payers, and patients understand that collection of accurate race and ethnicity information is essential if Colorado is to address inequities throughout the system and get resources to those who need them most.

Concurrently, it is imperative that policy makers safeguard this information to avoid perpetuating the injustice and discrimination already endemic in the systems we are attempting to fix.

Geocoding the CO APCD

The changes to the DSG are just the beginning in improving the health equity reporting capabilities of the CO APCD. In FY2019-2020, CIVHC collaborated with data manager, HSRI, to research various ways to link geographic information with CO APCD data and developed a plan to geocode member and provider addresses at the census tract and census block levels to be implemented in the following year. The coding will allow analysts to use external data sources to pull in demographic and socioeconomic information about specific locations in Colorado. This will provide information for benchmarking the data collected by submitters and a starting

Expanding the Picture of Health

Geocoding the CO APCD could allow for integrating the claims data with other State data sets like those from the Departments of Correction, Education, Human Services, and Transportation.

point for accessing accuracy. Moreover, bringing in external data sets such as the U.S. Census Bureau's American Community Survey datasets, ShiftLab Community Facts, the Area Deprivation Index, and the CDC Social Vulnerability Index will enable the CO APCD to provide insights beyond the traditional health care system and offer opportunities to improve health and health care for marginalized populations.

Appendix A – FY2019-2020 Non-Public CO APCD Data Fulfillments

Stakeholder Type	Purpose	Product	Scholarship
Clinician/ Provider	This stakeholder would like to quantify how health screenings are helping to draw participants back into the health system, especially those who have been identified with an out-of-range result (i.e. high cost conditions, 3 comorbidities, etc.).	Custom Report	Yes
Clinician/ Provider	The goal of this project was to understand volume trends and costs across the state CPT codes related to specific procedures. By understanding these volumes, spend amounts, and trends, for in and out of network payments they could have more informed conversations regarding current legislative initiatives and their potential impact.	Custom Report	
Clinician/ Provider	This stakeholder is linking CO APCD data to other sources so they can get a complete picture of care for their patients with Medicaid and members who lose their insurance and transition to Medicaid or other forms of health care coverage. Once generated, this information will be used to support two studies on opioids funded by the National Institute on Drug Abuse.	Fully-Identifiable Data Set	
Clinician/ Provider	This provider is using CO APCD to prepare for the impact and implementation of CO HB 1174, Out-of-Network Services and enable their physicians to continue to provide high-quality health care services to Coloradans.	Custom Report	
Consultant/ Vendor	Data contractors with a multi-payer initiative fostering collaboration between public and private health care payers to strengthen primary care.	Fully-Identifiable Data Set	
Consultant/ Vendor	Schizophrenia typically develops in early adulthood. This study intends to examine changes in insurance coverage (“insurance churn”) among this population, categorize churn into groupings, and evaluate whether health care utilization is different for these groups.	Limited Data Set	
Consultant/ Vendor	This stakeholder helps providers to develop and operate episode of care payment programs to improve clinical outcomes, lower costs and increase patient satisfaction. They hoped to integrated CO APCD data into their Colorado-based initiatives to refine provider-level cost and quality metrics for episodes of care and establish benchmarks for comparison.	Limited Data Set	
Consultant/ Vendor	Data contractors with a multi-payer initiative fostering collaboration between public and private health care payers to strengthen primary care.	Fully-Identifiable Data Set	

Stakeholder Type	Purpose	Product	Scholarship
Employer	By using CO APCD data to understand the cost drivers in certain Colorado counties, these employers can target solutions in highest areas of impact. CO APCD data will also allow them to compare costs with the Front Range so they can better understand the needs and services that can assist in lowering costs and improving care.	Limited Data Set	Yes
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	
Employer	This stakeholder used CO APCD data combined with the Milliman MedInsight Low Value Care analytic tool to identify medical tests, treatments, and procedures considered to be of low value in a Colorado region and comparing the results to other parts of the state.	Custom Report	Yes
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	
Employer	With this data request from the CO APCD, this stakeholder intends to examine current health care costs and utilization of health care services in the western slope region of Colorado. Their goal is to understand cost drivers and to explore and develop mid- and long-term strategies to continue to lower cost of care and health care premiums for communities in Colorado.	Limited Data Set	
Employer	This employer is using CO APCD data to analyze what is driving high health care costs in their county and communities and then work to develop mid- and long-term strategies to drive change.	Limited Data Set	Yes
Employer	This employer used aggregated employer, county, and state level CO APCD data to compare their inpatient and outpatient costs to what Medicare would pay for the same services.	Custom Report	Yes

Stakeholder Type	Purpose	Product	Scholarship
Employer	CO APCD data helped this employer examine patterns of care around knee arthroscopy and knee replacement/revision compared to other regions in Colorado as well as the referral patterns that lead to these procedures.	Custom Report	Yes
Employer	This employer is analyzing their claims data from the CO APCD and data from self-funded employer sponsored plans (not currently captured within CO APCD data) to understand the impact of a large employer self-funded insurance population on their overall costs and the overall drivers of their health care costs and how they deviate from other communities, for example those on the front range.	Limited Data Set	Yes
Employer	By understanding the cost drivers in specific Colorado counties, employers in the area can target solutions to the highest areas of impact. Also, by being able to compare similar costs to the Front Range, they can better understand the needs and services that can assist in lowering costs and improving care.	Limited Data Set	Yes
Employer	This employer group is using CO APCD data to lower cost of care for employers and individual purchasers by working collaboratively with payers and providers.	Custom Report	Yes
Employer	The Low Value Care report will allow this employer group and employers within specific counties to assess what services in their region are considered low value and where there may be opportunity to educate employees, employers, and health care providers around possibly harmful or unneeded services.	Standard Report	
Employer	The Top Procedure Episode Cost Analysis Report will allow employers in a specific county to assess what key procedures in their region are contributing to costs and where there may be opportunity to educate employees, employers, and health care providers around opportunity to collaborate and/or lower costs.	Standard Report	
Employer	The objective of this standard report is to use CO APCD data to highlight opportunities for lowering costs, improving transparency, and ensuring affordability for local Colorado purchasers. This is beneficial to all local community purchasers of healthcare services – i.e. individuals, small group employers, and self-funded employers.	Standard Report	
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	

Stakeholder Type	Purpose	Product	Scholarship
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	
Employer	Allow employers to compare the prices they are paying for certain aggregated health care services to the prices that would have been paid by Medicare for those same services. This information may help inform local, regional, and/or local state-wide efforts to understand the cost of health care as well as strategies and tactics to address high-cost areas.	Standard Report	
Facility/ Health System	This stakeholder is using CO APCD data to look at utilization of air and ground specialty medical transport services and access to these services for residents of Colorado. Their goal with this project is to consider where they might enhance services, streamline operations, and expand education and training to better meet the health care needs of all Colorado residents.	Custom Report	
Facility/ Health System	Researchers are using CO APCD data to examine the impact of the Parents as their Child's Certified Nursing Aide (pCNA) program on utilization and costs.	Limited Data Set	Yes
Facility/ Health System	Though this stakeholder has a robust stream of internal administrative data, it is not comprehensive. This subscription to CO APCD data enabled a broad range of improvements designed to impact patients, providers, payers and employers.	Standard Data Set	
Facility/ Health System	Researchers hope to use CO APCD data to predict hospital and long-term outcomes up to 2 years following hospital discharge for patients admitted to an ICU in Colorado from 2012-2019.	Limited Data Set	Yes
Government Agency	A data set with medical, pharmacy, and dental claims to assist the with fraud and abuse vendor conversations.	De-Identified Data Set	
Government Agency	This analysis looked at utilization metrics in Colorado including: admits per thousand, discharges per thousand, average length of stay, ED visits per thousand, and outpatient (non-ED) visits per thousand.	Custom Report	
Government Agency	A report investigating the costs for prescription drugs including generic drugs and brand name drugs in Colorado by Medicare, Medicaid and Commercial payer.	Custom Report	
Government Agency	Tableau dashboard with many measurements and views of information describing access to care.	Custom Report	

Stakeholder Type	Purpose	Product	Scholarship
Government Agency	Annual update to existing report, which is used to analyze spending and utilization rates for select procedures on a named provider and payer basis based on DOI geographic rating regions.	Custom Report	
Government Agency	Analysis and reports of inpatient hospital case-mix and payments across lines of business to support study of acute care hospital payment variation.	Custom Report	
Government Agency	Analysis of opioid provider prescribing practices for Medicaid and commercially-insured members.	Custom Report	
Government Agency	Measurement and analysis of frequency and payments for tests and treatments where risks exceed the benefit for patients.	State Development	
Government Agency	Analyze the cost and utilization of total, generic, brand name and specialty drugs by payer category to inform strategies to reduce pharmacy costs.	Custom Report	
Government Agency	Analysis and reports of procedure-based episodes of care by hospital for Medicaid and commercially-insured members to support Centers of Excellence program.	State Development	
Government Agency	Analysis of differences in risk-adjusted total costs of care and of utilization and price indices for Medicaid and commercially-insured members.	State Development	
Government Agency	Reports and analysis of the adoption of alternative payment models and investment in primary care.	State Development	
Government Agency	Analysis and reports of drug rebates on pharmacy spending and spending growth.	State Development	
Government Agency	Analyze the cost and utilization of total, generic, brand name and specialty drugs by payer category to inform strategies to reduce pharmacy costs.	State Development	
Government Agency	Payment information from APCD to support implementation of HB 19-1174, governing reimbursement for out-of-network services.	State Development	
Government Agency	CO APCD Snapshots break down what the CO APCD contains by payer type, number of lives, and number of claims.	State Development	
Government Agency	This stakeholder wants to understand how state funds are being spent on Colorado's behavioral health care delivery system for children. The aim is to assess whether resources are being spent on the most effective services in the most efficient way.	De-Identified Data Set	Yes

Stakeholder Type	Purpose	Product	Scholarship
Government Agency	This population-level analysis of motor-vehicle related injuries will help drive public health injury prevention efforts by identifying the key factors contributing to motor vehicle crashes that caused injuries.	Limited Data Set	Yes
Government Agency	Colorado APCD data will be used to enhance programs and enable this stakeholder to identify and respond to emerging issues.	Limited Data Set	
Government Agency	The Inpatient Outmigration report and Outpatient Outmigration report will help this stakeholder to better understand the costs of care from community to community, and facility to facility across Colorado by reviewing historical inpatient, outpatient and professional fee costs.	Standard Report	
Government Agency	Analysis of primary care spending as a percentage of total medical expenditures by line of business and payer. Includes claims payments and non-claims payments made through alternative payment models. Pursuant to SB 19-1233.	Custom Report	
Government Agency	Analyze, evaluate, and model claims data to support integration of behavioral health care services with physical health care services in primary care settings.	Limited Data Set	
Government Agency	CO APCD data will help this stakeholder to establish reasonable fees associated with trauma activation to support appropriate care for injured workers, sustainability for trauma activation centers in our state, without unnecessary increases to costs that may increase employer premiums for workers' compensation.	Custom Report	Yes
Government Agency	This one-month sample data will allow organizations, researchers, and/or legislators the opportunity to understand the capacity of the data within the CO APCD.	Standard Data Set	
Government Agency	CO APCD data helped this stakeholder examine emergency department usage in their region in order to understand where there is significant variation in utilization and cost and how this compares to other areas in the state.	Custom Report	
Health Plan	This stakeholder used de-identified CO APCD data to understand how their hospital and physician discounts compare to other payers in the Colorado market. No other payers were listed by name in the report received by Anthem.	Custom Report	
Health Plan	This one-month sample data will allow organizations, researchers, and/or legislators the opportunity to understand the capacity of the data within the CO APCD.	Standard Data Set	

Stakeholder Type	Purpose	Product	Scholarship
Non-Profit	In order to understand where resources maybe prioritized in the future, this stakeholder is using CO APCD data to investigate utilization of health care services provided in school-based health centers.	Standard Data Set	Yes
Non-Profit	This stakeholder is seeking to explore the trends of out of network claims and quantify the effect of excessive out-of-network charges in Colorado. They hope to more clearly identify the impact of out-of-network claims on the affordability of health care for individual consumers and patients and the broader Colorado health care system.	Custom Report	
Non-Profit	Study of the utilization of low-density CT scanning for lung cancer screening of individuals with a significant tobacco smoking history.	Custom Report	Yes
Non-Profit	This nonprofit is using the CO APCD CPT 4 Report to investigate reimbursement amounts and volume for specific procedures.	Standard Report	
Non-Profit	The overall objective of this project was to integrate data from the CO All Payer Claims Database to Community Health Centers Electronic Health Records data. The integrated dataset would allow the stakeholder to produce utilization, cost and quality indicator reports.	Fully-Identifiable Data Set	
Non-Profit	The goal of this project is to research patterns of diagnosis and treatment for common pain conditions, and patterns of diagnosis and treatment for opioid use disorder in Colorado, to inform future efforts.	Custom Report	Yes
Non-Profit	The outmigration reports allowed individual hospitals the opportunity to understand what services their local residents leave the area to receive. Patterns of outmigration could inform hospital leadership and the community about services that are needed or issues related to over / under-utilization, etc.	Standard Report	
Non-Profit	This stakeholder is using CO APCD data and data from self-funded employer-sponsored plans (not currently captured within CO APCD data) to understand the drivers of health care costs in their region. This data will help them identify opportunities to design strategies and programs to address those cost drivers in collaboration with local businesses and providers.	Limited Data Set	Yes
Non-Profit	The outmigration report will help this stakeholder to examine where local residents are getting health care and to identify opportunities to design strategies and programs to address cost drivers in collaboration with local businesses and providers.	Standard Report	

Stakeholder Type	Purpose	Product	Scholarship
Non-Profit	This stakeholder is using CO APCD data to understand cost of care and volume for specific procedures in their region.	Standard Report	
Non-Profit	This stakeholder used CO APCD data to determine whether the volume of advanced care directive billing changed in Colorado as well as Weld and Larimer counties between January 1, 2016 and December 31, 2018, where patients were having the discussions, and which payer was being reimbursed.	Custom Report	Yes
Researcher	Researchers are using CO APCD to characterize changes in insurance coverage among pregnant Medicaid beneficiaries over time and between sources of coverage.	Limited Data Set	Yes
Researcher	This project will develop and implement a Collaborative Improvement and Innovation Network aimed at testing and spreading innovative care delivery and payment models for children with medical complexity.	De-Identified Data Set	
Researcher	Researchers are using CO APCD data to develop methodology for identifying physician surveys of physician aid in dying using a state-level all-payer claims database and physician demographic data.	Standard Data Set	
Researcher	Researchers are interested in investigating the incidence of cancer diagnoses in the region near the former Rocky Flats plant and then compare that to the rest of Colorado over the same time period.	Custom Report	Yes
Researcher	Researchers hoped to link CO APCD data for specific patients to their existing health data warehouse.	Limited Data Set	
Researcher	Researchers are using CO APCD data to assess the impact of hypothetical changes to how Medicare calculates payments rates within the Medicare Physician Fee Schedule (MPFS). The CO APCD allows them to look at the impact for a larger share of practices than just those that accept Medicare payments.	De-Identified Data Set	
Researcher	In a nationwide study incorporating CO APCD data, researchers analyzed payments made by commercial insurers for inpatient and outpatient procedures at acute care hospitals compared to what Medicare pays for the same services.	Limited Data Set	
Researcher	Data and analytics to support evidence-based changes that help providers improve outcomes for their patients while lowering costs.	Custom Report	
Researcher	This study aims to explore whether socioeconomic bias contributes to the rates of surgical treatment for orthopedic injuries.	Limited Data Set	Yes

Stakeholder Type	Purpose	Product	Scholarship
Researcher	Researchers are using CO APCD data to determine two things 1) the relationship between travel (driving) distance to the screening facility and adherence to cancer screening guidelines, 2) if patients with high levels of comorbidities are less likely to be adherent to screening.	Fully-Identifiable Data Set	Yes
Researcher	Researchers are using CO APCD data to investigate the incidence and treatment of steroid-related Pneumocystis Pneumonia in Colorado and prevent the morbidity, loss of quality of life, and high mortality that occurs from this highly preventable condition.	De-Identified Data Set	Yes
Researcher	Researchers are hoping to link claims data from the CO APCD and health information exchange (HIE) data from the Colorado Regional Health Information Organization (CORHIO) and the Quality Health Network (QHN) in order to determine whether HIE participation by hospitals and PAC organizations results in differences in patient outcomes including hospital readmissions, mortality, and cost, with a focus on patients with dementia.	Limited Data Set	Yes
Researcher	By linking and evaluating CO APCD data with the Colorado Central Cancer Registry (CCCR) data, researchers are examining prescription and treatment patterns for cancer across health insurance, delivery systems and geographic location in Colorado.	Limited Data Set	
Researcher	The goal of this study is to use CO APCD data to understand emergency department visits for complications following bariatric surgery and design interventions to reduce utilization while ensuring better outcomes for all patients.	Limited Data Set	Yes
Researcher	Researchers are using CO APCD data to examine sex demographic differences in young adults who have strokes.	Fully-Identifiable Data Set	Yes
Researcher	This project is aimed at evaluating how respite care impacts the utilization and cost of care for those affected by Alzheimer’s disease. Respite care is not always understood or known by those needing to access these services even though it can make a positive impact on the person receiving care and also the caregivers. Better understanding how respite care is being utilized and the impacts it has on cost and utilization can help to educate patients and provider groups on these services.	Limited Data Set	Yes

Appendix B – Potential CO APCD COVID-19 Analyses

Things We Can Do Now (April 2020)
<ul style="list-style-type: none"> Identify high risk populations by zip code and county to prepare for future surges (using CDC definition of high-risk conditions, age groups, etc.) – Published 5.2020
<ul style="list-style-type: none"> Estimate potential cost impact of moratorium on elective services based on historical data for the same time period – Published 5.2020
<ul style="list-style-type: none"> Evaluate historic use of telemedicine services to benchmark adoption pre and post COVID-19 and inform efforts to increase telehealth access for underserved areas and those most at-risk – Published 8.2020
<ul style="list-style-type: none"> Evaluate COVID-19- like respiratory claims from fall 2019 compared to prior years to estimate actual number of Coloradans who may have already had the disease or been exposed
Things We Can Do in Near Term (2-6 months)
<ul style="list-style-type: none"> Identify churn in health care coverage
<ul style="list-style-type: none"> Evaluate use of telemedicine (including e-consults if possible) by specialty and patient demographics during and post outbreak
<ul style="list-style-type: none"> Understand impact of moratorium on elective services in terms of reduction in utilization and impact on specific provider types in terms of loss of revenue and access to care (rural hospitals, primary care, Community Health Centers, etc.)
<ul style="list-style-type: none"> Analyze mental health/behavioral health services during/post COVID-19 by evaluating prescription medication fills, telemedicine visits with mental health providers, and substance use disorder and behavioral health-related claims
<ul style="list-style-type: none"> Assess impact of changes in member liability by health insurance payer
<ul style="list-style-type: none"> Determine changes in eligibility for Colorado’s re-insurance program (individuals with over \$30k in annual health care spending)
<ul style="list-style-type: none"> Evaluate potential impact of resource scarcity (e.g. drugs being diverted from people with chronic conditions, etc.)
<ul style="list-style-type: none"> Understand underuse of critical services due to patient fear of accessing system (i.e. ER visits for AMI/Stroke)
Things We Can Do in 6+ Months (requires significant data runout)
<ul style="list-style-type: none"> In-depth analysis of mortality and reasons for death in Colorado (would require mortality data), to understand deaths related to COVID-19, potential undercounting of these deaths and deaths from other causes where the patient could not receive timely treatment (e.g., AMI)
<ul style="list-style-type: none"> Financial impact to long-term care and/or home health with changes in residency
<ul style="list-style-type: none"> Evaluate how moratorium on elective services impacted outcomes for patients with chronic diseases or other conditions requiring regular care, and whether patients did seek care immediately or if “fear” may have played a role in accessing care post-pandemic; include analysis of pediatric care (e.g. well-child visits) as separate category
<ul style="list-style-type: none"> Determine if there was a backlog of primary care after bans were lifted

<ul style="list-style-type: none">• Analysis of impact of health care disparities on COVID-19 incidence and mortality in terms of race/ethnicity and social determinants of health
<ul style="list-style-type: none">• Determine potential impact on insurance premiums (e.g. assessing claims in which the patient portion of the cost is waived)
<ul style="list-style-type: none">• Evaluate long-term use of telemedicine/e-consults and potential savings by specialty categories with increased use
<ul style="list-style-type: none">• Provide a public dataset that could be available to enable general research on COVID-19
<ul style="list-style-type: none">• Determine if transmission rates were higher in multi-generational households (may require data from additional sources)