CIVHC
CENTER FOR IMPROVING
VALUE IN HEALTH CARE

Data Release Application

Limited and Identifiable Extracts

Navigation

Data Release Application

Limited and Identifiable Extracts

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Client Application Revision History

The following reflects the history of changes made to this document during the application process prior to project production. Once in production, any further changes to the application may result in additional cost and production delays.

To be completed by CIVHC staff			
Date	New Version Number	Description of Change(s)	CIVHC Change Author (full name, complete title)
3/20/2025	V.01	Initial version drafted with client.	Lucía Sanders, Key Account Manager
4/8/2025	V.02	Updates to General Project Details, Project Contacts, Project Purpose, Linkage, Filter Criteria, Data Destruction Period.	Lucía Sanders, Key Account Manager
4/11/2025	V.03	Updates to Project Purpose, Methodology and PHI justification.	Lucía Sanders, Key Account Manager
4/23/2025	V.04	Addition of Member County.	Lucía Sanders, Key Account Manager
4/28/2025	V.05	Added plan to identify RAE services, use of provider location information, and justification for breadth of request and aims.	Lucía Sanders, Key Account Manager
	V.06		
	V.07		
	V.08		
	V.09		
	V.10		

Data Release Application

Limited and Identifiable Extracts

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Data Requestor Details

General Project Details

Project Title:	Behavioral Health Integration in Colorado Medicaid: Impact on Access, Quality, and Cost
Application Start Date:	3/13/2025
Requested Project Delivery Date:	6/30/2025
Client Organization (legal name):	Harvard T. H. Chan School of Public Health
Client Organization Address:	
CIVHC can publicly share the Client Organization's name in its Change Agent Index.	☐ Yes ☐ No
To be completed by CIVHC staff	
CIVHC Contact (full name, complete title):	Lucía Sanders, Key Account Manager
Project Number:	25.25
Condensed Project Title:	Behavioral Health Medicaid

Project Contacts

Project Contact Name:	Meredith B. Rosenthal, PhD
Title:	Professor, Department of Health Policy & Management
Email:	mrosenth@hsph.harvard.edu
Phone Number:	
Analytic Contact Name:	
Title:	
Email:	
Phone Number:	

Invoice Contact Name:	
Title:	
Email:	
Phone Number:	
Data Release Fee Signatory:	
Signatory Organization (legal name):	
Title:	
Email:	
Phone Number:	
Data Use Agreement Signatory:	
Signatory Organization (legal name):	
Title:	
Email:	
Phone Number:	

Data Release Application

Limited and Identifiable Extracts

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Project Schedule and Purpose

Proposed Project Start Date[1]:	7/1/2025
Anticipated Project End Date:	7/1/2027
Proposed Publication or Release Date:	12/31/2027

1. Explain the purpose of your project. If this project is related to a previous project, also explain how this project is related and whether the data or results of both projects will be combined.

In the post-COVID-19 era, behavioral health needs continue to rise—about 20% of adults have anxiety-related disorders, nearly 10% experience at least one episode of major depression, and youth suicide attempt rates have risen by 40% in recent decades. Medicaid is a key funder of behavioral health care for low-income Americans, however, in order to improve care access, quality, and efficiency, state Medicaid offices must overcome long-standing fragmentation between medical and behavioral health care providers while anticipating near-term budget shortfalls. Value-based payment reform—incentives for reducing spending while improving quality—have yet to be rigorously evaluated for their effect on behavioral health care for Medicaid enrollees.

Colorado Medicaid's ACC Phase II represents a novel value-based payment reform, which combines accountability for behavioral health and coordination of care with primary care providers. Empirical evidence on the degree to which it engenders clinical integration and improves behavioral health quality and cost will be highly relevant to Medicaid policy. Accordingly, we will evaluate the impact of Colorado's Medicaid Accountable Care Collaborative (ACC) Phase II (henceforth ACC Phase II) on claims-based measures of health care access, use, and total cost of care for enrollees with behavioral health conditions.

In this project, we propose to use Colorado all-payer claims data and quasi-experimental methods to evaluate the impact of Colorado's Medicaid Accountable Care Collaborative (ACC) Phase II (henceforth ACC Phase II) on behavioral health care access, use, and total cost of care for enrollees with behavioral health conditions. As Colorado Medicaid begins to implement ACC Phase III , it will particularly important to take stock of the impact of Phase II.

2. Detail the specific project aims, research question(s) you are trying to answer, or problem(s) you are trying to solve with this data request.

i. Examine the impact of Colorado Medicaid's ACC Phase II on behavioral health care access

ii. Examine the impact of Colorado Medicaid's ACC Phase II on behavioral health care quality

iii. Examine the impact of Colorado Medicaid's ACC Phase II on behavioral health care total cost of care

iv.

v.

[1] After all required documents have been signed, typical production time is 30-60 days for a Limited or Identifiable Extract. Anticipate a longer production period for projects including a Finder File or creation of a Member Match File.

3. Describe your methodology or how you will be using data from the Colorado All Payer Claims Database (CO APCD) to answer your research questions.

For the purposes of this project, we define access as the use of healthcare. Since this is a claims-based study we do not expect to capture other dimensions of access other than use (e.g., timeliness of care, or ease of healthcare use aka accessibility).

Conceptually, we define healthcare quality using the National Academies of Medicine definition, "The degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." (definitions-of-quality-and-patient-safety-final.pdf)

Operationally, we will measure behavioral healthcare quality using established claims-based measures defined by national organizations (NCQA-HEDIS) and the Colorado ACC program itself.

Category	Measure	Source
Quality	Outpatient follow up after behavioral health ED visit	NCQA-HEDIS
	Follow up care for depression after positive screen	Colorado ACC Behavioral Health Incentive Specification Document
	Follow-up care for youth prescribed medications for common behavioral health conditions (ADHD, anxiety, depression)	NCQA-HEDIS
	Anti-depressant medication management	Colorado ACC Behavioral Health Incentive Specification Document
	Outpatient follow-up within 7 days of inpatient stay for behavioral health condition	Colorado ACC Behavioral Health Incentive Specification Document

The total cost of care will be measured by summing payer and patient costs, i.e., total allowed cost. We will also examine total plan paid amounts and total member liability as components of total allowed cost.

We will use Colorado all-payer claims data (files that include both Medicaid and commercial health plan enrollees) and a Difference-in-Difference (DiD) approach to causal inference. We will make inferences based on changes in outcome measures of interest among Colorado Medicaid enrollees, comparing ACC Phase I with ACC Phase II relative to contemporaneous changes in care for commercially insured Coloradoans.

We agree that individuals insured through commercial health plans are likely quite different from those who are Medicaid recipients, namely along the dimension of socioeconomic background.

First, our research design (a difference-in-difference model) does not require that we assume that the control group is identical to the intervention group. The assumption is only that the change over time (from the pre- to the post-policy period) in utilization, quality and cost of care for the comparison group is a good proxy for change in outcomes in the intervention group that would have occurred in a counterfactual world where ACC Phase II was not implemented. This is an inherently untestable assumption, but it points us in the direction of selecting a comparison group that is as similar as possible and checking pre-intervention trends in the outcomes of interest as evidence for comparability.

The intervention group will be made of up Medicaid enrollees in Colorado are served by a Regional Accountable Entity (RAE). To approximate the sociodemographic background of Medicaid recipients, we can use propensity score matching/weighting techniques to create a comparison group of commercially insured Coloradoans similar to the intervention group on key demographic characteristics (e.g., age, geocoded socioeconomic factors like percent living in poverty). Notably, some commercial health plan enrollees live in sociodemographic areas that are identical that that of Medicaid enrollees. (Chien, 2017)

In the event that these matching/weighting techniques yield a comparison group that is very different from the intervention group – especially with regard to baseline trends in utilization, quality and cost, we will explore alternative models. First, we can take account of differences in baseline trends explicitly in our analysis. Second, we can apply an interrupted time-series design without a control group that looks for a break in trend (at the time ACC Phase II is implemented) for the Medicaid enrollees' own utilization, quality and cost to identify impact.

Note: Medicaid enrollees who are dually eligible and those that reside in long-term care facilities will be excluded from the analysis because RAEs do not manage their care.

The difference-in-difference (DiD) model allows us to estimate the impact of Colorado's ACC II by allowing us to examine how Medicaid enrollees fair along our outcomes of interest (access, quality, and total cost of care) relative to enrollees who did not receive the ACC II intervention. We will model the outcomes ($\boldsymbol{Y_{et}}$) for person *e* at time *t* using three years of pre-intervention data (2015-2017) and four years of post-intervention data (2019-2022). The comparison cohort will be constructed from a sample of Coloradoans with commercial insurance to control for secular trends in health care utilization and spending:

$$[E(Y_{et})] = \beta_0 + \beta_1 \times Post_t + \beta_2 \times Year_t + \beta_3 \times Medicaid_e + \beta_4 \times Medicaid_e * Post_t + \beta_4 \times Patient_{et} + \beta_5 \times SEP_{et} + \beta_6 \times Physician_{et}$$

where $Post_t$ represents whether the year occurs before or after the second iteration of Colorado's ACO program was launched; $Year_t$ represents the calendar year to account for common shocks to the outcome measures and other factors that affect health care access and utilization across all groups; $Medicaid_e$ indicates whether the patient is in Colorado Medicaid or has commercial insurance. $Patient_{et}$ is a vector of patient characteristics eligibility type, age, sex, and chronic conditions; SEP_{eht} is an indicator of socioeconomic position derived from characteristics of the patient's census track area that are associated with poor health and $Physician_{et}$ is a vector of physician characteristics related to the patient's attributed primary care provider including whether they are part of an FQHC and how many Medicaid patients they see. Under the identifying assumption that the comparison group changes in outcomes are indicative of what would have happened in the intervention group, β_4 will yield the DiD estimate of the Colorado's ACC Phase II program.

Before estimating these models, we will examine the parallel trends assumption. If trend differences appear important, we will follow the guidance of Bilinski and Hatfield to estimate their implications for the inferences of interest.[2] We will also consider the use of matching / weighting methods to ensure comparability of samples in case of non-linearities in the relationships of interest.

We will use an intent to treat approach to examine the impact of RAE's including the non-billable services they provide (e.g., care coordination for physical and behavioral health [BH]care). This means that we will assume that enrollees received the necessary levels of RAE services during the intervention period rather than measure those services directly. We will focus on the detection and treatment of common chronic physical or BH conditions; we will not attempt to measures RAE services not directly related to these types of conditions (e.g., dental care, substance use treatment).

We plan to use provider location in a sensitivity analysis to help us understand when enrollees are using providers within their home county versus traveling for physical and BH care services outside their home county. To the extent that enrollees seek care outside the county managed by their RAE we might see decreased effectiveness of care coordination efforts.

In general, the difference-in-difference study design works best when pre- and post-intervention trends are ascertained well, which is why we ask for 8 years of CO APCD data—3 years to establish the pre-intervention trend (2015, 2016, 2017), 1-2 years flanking the start of the intervention year (2018 and 2019 for July 1st, 2018) and then 3 years for the post-intervention trend (2020, 2021, 2022). Three years helps us account for secular trends that are otherwise present in the data. For example, Medicaid is expanding after the 2010 Affordable Care Act during the pre-intervention period and hospitalization and BH needs are changing dramatically during the COVID-19 pandemic during the post-intervention period.

Narrowing the request to a specific age group and/or behavioral health services recipients is less than ideal. We could potentially remove infants, but in general, each year we narrow the age group diminishes our ability to detect how well the ACCII help detect and then manage the physical or BH conditions of interest. Key BH conditions are detected at every phase of life—autism (0-5 year olds), attention deficit hyperactivity disorder (6-12 year olds), major depression and generalized anxiety disorders which are associated with suicidality (13-30 year olds), and then must be managed for the remainder of the life course (31-64 years). Narrowing the age groups also detracts from our ability to account for childhood-onset chronic physical health conditions that are likely to be present alongside BH ones (48% of adolescents and young adults in our current CO APCD analysis).

4. Explain how this project will benefit Colorado and its residents.[3]

This project will benefit Coloradans by helping state officials, health plans, health care providers, and patient stakeholder groups understand the degree to which the state's Medicaid payment reform efforts are yielding improvements in behavioral healthcare access, quality, and total cost of care.

5. Describe how your project will improve health care quality, increase health care value, or improve health outcomes for Colorado residents.[2]

This project will support lowering health care costs because studying access, quality, and total cost of care will help characterize the degree to which healthcare spending yields care value. It will also provide insights into how the balance between spending, care quality, and health has changed in the wake of the implementation of ACC Phase II so that stakeholders can decide if or how to adjust their policy strategies going forward.

6. Health equity is defined as the state in which everyone has a fair and just opportunity to attain their highest level of health. Explain how your project addresses health equity.

This project addresses health equity by examing care access, quality, and total costs of care across all Medicaid recipients within the state.

[2] Bilinski, A., & Hatfield, L. A. (2018). Nothing to see here? Non-inferiority approaches to parallel trends and other model assumptions. arXiv preprint arXiv:1805.03273.
[3] It is a statutory requirement for all non-public releases of CO APCD data to benefit Colorado or its residents. Contributions to generalizable knowledge alone are not sufficient to satisfy this requirement.

7. Describe any publication you plan to develop based on your use of CO APCD data, its intended audience, and whether it will be made publicly available.

To begin, we will disseminate our findings from the study through one or more research publications in leading medical or health policy journals (e.g., New England Journal of Medicine, JAMA, Health Affairs). We will also prepare an executive summary and oral presentation materials that we can deliver to different stakeholders (e.g., researchers, policymakers, practitioners) and in different venues (e.g., academic seminars and conferences, National Association of Medicaid Directors Conference, public meetings held by community-based organizations). We also plan to contact Colorado Medicaid officials and update them on our work as we finalize our analyses and obtain findings; given ongoing data use and projects, Dr. Chien presents with some regularity to Colorado's Center for Improving Value in Health Care. We have a set of contacts developed from Professor Rosenthal's earlier Medicaid ACO project that will be a starting point for outreach with stakeholders. We are eager to work with the Commonwealth Fund's staff to identify contacts among State Medicaid groups (e.g., the National Association of State Medicaid Directors), CMS staff, and in Congress where we can share insights from our research with Medicaid policy decision makers.

Data Matching and Linkage

Finder File

A Finder File is a file you submit to CIVHC with information about a pre-selected cohort for matching to CO APCD data. Ask your CIVHC Contact for more information about this process and requirements for Finder File submission.

Will you provide CIVHC with a Finder File as part of this project?

- ☒ No
- ☐ Yes

Member Match File

A Member Match File is a file that CIVHC creates on your behalf to send to a registry or other outside entity to create a crosswalk connecting data from the CO APCD to the other entity's data.

Does this project require the creation of a Member Match File?

- ☒ No
- ☐ Yes. Consult with your CIVHC Contact about completing a separate Data Element Selection Form specifying the data elements that should be used to create the Member Match File.

  Answer the following:

Who will receive the Member Match File?

Control Group

A Control Group is a group of individuals who can be used to compare against the cohort identified in the Finder File.

Will you need CIVHC to create a Control Group as part of this project?

- ☒ No
- ☐ Yes. Consult with your CIVHC Contact about completing a separate Control Group Data Element Selection Form specifying the data elements that should be used to define the Control Group.

Linkage

Data Linkage is a method of joining data from different sources together to create a new data set.

Will the CO APCD data be linked to another data source?

☐ No
☒ Yes. Answer the following:

What is/are the other data source/s?
American Community Survey
Who will perform the data linkage?
Study staff
What identifying data elements will be used to perform the data linkage?
Census tract
What non-CO APCD data elements will appear in the new linked file?
Derived variables American Community Survey (e.g., percent of census tract living above the federal poverty line).

Data Inclusion Criteria

Make selections in the following sections based on what data you want to have included in this extract. If you will be creating a Control Group, complete this section for your study population and not the Control Group.

Protected Health Information (PHI)

Indicate which Protected Health Information data elements you require for your project purpose:

Available for Limited and Identifiable extracts:		
☐ Member 5-Digit Zip Code	☒ Member County	☐ Member City
☒ Member Dates of Service	☐ Member Eligibility Dates	☐ Claim Paid Dates
☐ Employer Name	☒ Member Census Tract	☐ Member Census Block
☐ Member Census Block Group		
Available for Identifiable extracts only (see also Identifiable Data Use Approval):		
☐ Member Name	☐ Member Date of Birth (if requesting more than year only)	
☐ Member Street Address	☐ Member Latitude and Longitude	
Provide detailed justification for the inclusion of all PHI data selected above, and explain how its inclusion meets the Minimum Necessary Requirement.[4]		
Member County is required to assign members to RAEs, as these are defined by county, and the RAE data element in the CO APCD was not collected from payers until 2023. We will use Member Census Tract to create a commercially insured comparison group for our Medicaid-insured intervention group and the difference-in-difference analysis. Member Census Tract will allow us to identify people who live in similar sociodemographic areas, but differ based on the type of insurance that they have. We need Member Dates of Service to ascertain monthly use levels for our healthcare access and utilization rates measures so that we can construct trends in outcomes and determine whether use occurred before or after the ACC Phase II was implemented (see model above).		

[4] Limited and Identifiable extracts must adhere to the Minimum Necessary Requirement under the HIPAA Privacy Rule; only that data required to answer the project purpose can be included in the request.

Line(s) of Business

- ☒ Commercial Payers
- ☒ Health First Colorado (Colorado's Medicaid and CHP+ programs)[5]
- ☐ Medicare Advantage
- ☐ Medicare Fee for Service (FFS)[6]

Year(s) of Data

☐ 2012	☐ 2013	☐ 2014	☒ 2015	☒ 2016	☒ 2017
☒ 2018	☒ 2019	☒ 2020	☒ 2021	☒ 2022	☐ 2023
☐ 2024[7]					

Claim Type(s)

☒ Inpatient Facility	☒ Outpatient Facility	☒ Professional
☒ Pharmacy	☐ Dental	

Financial Detail by Line Item

☐ Charged Amount	☒ Allowed Amount	☒ Plan Paid Amount
☐ Plan Pre-Paid Amount	☐ Member Copay	☐ Member Deductible
☐ Member Coinsurance	☒ Total Member Liability	

[5] Medicaid-only data requests must be approved by the Colorado Department of Health Care Policy and Financing.
[6] Medicare FFS data are not available for all requests and must go through a separate approval process.
[7] This year's data is incomplete and not fully adjudicated. Consult with your CIVHC Contact to find out what data is available at the time of your request.

Filter Criteria – Services, Providers, Facilities

If you need data for specific services, providers and/or facilities, specify that filter criteria below (ask your CIVHC Contact about including an additional file with this application for large code lists):

ICD Diagnosis Code(s):
Procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):
Drug(s) (list pharmacy NDC and/or HCPCS codes):
Facility Type(s):
Facilities (list NPIs and/or Pharmacy IDs):
Facilities within these geographical areas (list county, zip code, Census Tract, etc.):
Provider Type(s):
Provider(s) (list NPIs):
Providers within these geographical areas (list county, zip code, Census Tract, etc.):
Specific payers (minimum of five):

Other claim specification:

Filter Criteria – Members/Patients

If you need data for specific member/patient groups, specify that filter criteria below (ask your CIVHC Contact about including an additional file with this application for large code lists):

Ages:		
0-64 years		
☒ At the time of service	☐ At year end	☐ By another anchor date: *Specify here*
With these ICD Diagnosis Code(s):		
Who have had the following procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):		
Within these geographical areas (list county, zip code, Census Tract, etc.):		

Value-Add Data Elements

- ☐ Medicare Severity Diagnosis Related Group Codes (MS-DRGs)
- ☐ 3M All Patient Refined Diagnosis Related Group Codes (3M APR DRGs)
- ☐ Medicare Repricer (available at the claim line level)
- ☐ Fields from the American Community Survey (available at the Census Tract level):

Specify here

Additional Documentation

Data Element Selection Form (DESF)

The Data Release Application must be accompanied by a completed Data Element Selection Form. Ask your CIVHC Contact for more information about completing this form.

☒ By checking this box, the Client Organization confirms that the Data Element Selection Form has been completed.

☐ If applicable, by checking this box the Client Organization confirms that a separate Member Match File Data Element Selection Form has been completed.

☐ If applicable, by checking this box the Client Organization confirms that a separate Control Group Data Element Selection Form has been completed.

Identifiable Data Use Approval

If you are requesting Identifiable information, approval from an Institutional Review Board (IRB) or a Privacy Board is required before such data can be released.

☒ Not applicable; the Client Organization is requesting a Limited Extract.

Approval Type

☐ IRB Approval

☐ Privacy Board Approval

Approval Type

☐ Approval request not yet submitted.
Anticipated submission date:

☐ Approval request submitted and under review.
Anticipated project approval date:

☐ Approval already received.

Approval Documentation

☐ By checking this box, the Client Organization confirms that the IRB or Privacy Board **application and approval documents** have been provided to CIVHC.

Data Management Plan

An organization requesting CO APCD data must submit an organizational Data Management Plan to CIVHC outlining the organization's data security and data management policies and procedures to safeguard the data. This Data Management Plan must be approved by CIVHC prior to any data release.

Date Submitted to CIVHC:	
Date Approved by CIVHC:	

Client Acknowledgements and Signatures

Report or Product Distribution

If your project results in the production of a report for public distribution in any format (print, electronic, lecture, slides, etc.), including peer-reviewed publication, it must be submitted to CIVHC for review prior to public release. CIVHC will assess compliance with CMS Cell Size Suppression Policy, risk of inferential identification, CIVHC and CO APCD citations, and consistency with the purpose and methodology described in this Data Release Application. CIVHC will not assess the accuracy of the study results or attempt to recreate results.

This requirement is further defined in the Data Use Agreement. Failure to pursue and obtain CIVHC approval prior to publication will be a violation of the Data Use Agreement and may put the organization's future access to data from the CO APCD at risk.

☒ By checking this box, the Client Organization acknowledges this requirement.

Data Destruction Period

All data must be destroyed within 30 days of the project end date. If your project end date changes from this application, please reach out to your CIVHC Contact for a project extension request form.

☒ By checking this box, the Client Organization acknowledges that CIVHC's Data Destruction Certificate[8] must be completed and returned to DataCompliance@CIVHC.org by 7/31/2027 based on the Anticipated Project End Date.

[8] Available on the Data Release Application and Documents page of CIVHC's website under *Privacy, Security, and Regulatory Information*.

Data Users

List any individuals that will be working with the data and whether they should receive ongoing communications from CIVHC regarding use of CO APCD data (data warehouse release notes, data user group communications, etc.).

The Data Use Agreement must be updated every time an individual is granted access to the data during the project. Reach out to your CIVHC Contact for information about the amendment process.

Receive Data User Communications from CIVHC	Full Name	Title/Role	Organization	Email Address
☒	**Meredith Rosenthal**	Co-PI, Data Owner	Harvard TH Chan School of Public Health	Mrosenth@hsph.harvard.edu
☒	**Alyna Chien**	Co-PI, Data User	Boston Children's Hospital	Alyna.chien@childrens.harvard.edu
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				

Data Release Application Version Approvals

The Client Organization has reviewed and confirms that the final version number of the Data Release Application reflected below correctly represents the project objectives.

Version	Checkpoint
V.03	Presented at CIVHC Application Review
V.05	Presented to the Data Release Review Committee (DRRC)
V.00	Final version approved for production

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Lucía Sanders	Name:	Meredith Rosenthal
Title:	Key Account Manager	Title:	Professor
Date:		Date:	

Data Element Selection Form Version Approvals

The Client Organization has reviewed and confirms that the final version number of the Data Element Selection Form reflected below correctly represents the data specifications needed to meet the project objectives.

Version	Checkpoint
V.04	Presented at CIVHC Application Review
V.05	Presented to the Data Release Review Committee (DRRC)
V.00	Final version approved for production

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Lucía Sanders	Name:	Meredith Rosenthal
Title:	Key Account Manager	Title:	Professor
Date:		Date:	