Data Release Application
Limited and Identifiable Extract

Application Navigation

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Limited and Identifiable Extract

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
2/22/2024	V.01	Initial version drafted with client.	Lucía Sanders, Key Account Manager
3/11/2024	V.02	Clarified control group requirements and expanded on request for non-alias payer code/name. Updated requested project delivery date.	Lucía Sanders, Key Account Manager
3/18/2024	V.03	Removed request for payer name, associated linkage, and research questions around premiums. Reduced number of years of data requested. Added more detailed justification for the two drivers of the data set (providers and patients).	Lucía Sanders, Key Account Manager
3/25/2024	V.04	Updates to linkage section.	Lucía Sanders, Key Account Manager
Date	V.05	Click or tap here to enter text.	Name, Title
Date	V.06	Click or tap here to enter text.	Name, Title
Date	V.07	Click or tap here to enter text.	Name, Title
Date	V.08	Click or tap here to enter text.	Name, Title
Date	V.09	Click or tap here to enter text.	Name, Title
Date	V.10	Click or tap here to enter text.	Name, Title
Date	V.11	Click or tap here to enter text.	Name, Title
Date	V.12	Click or tap here to enter text.	Name, Title
Date	V.13	Click or tap here to enter text.	Name, Title
Date	V.14	Click or tap here to enter text.	Name, Title
Date	V.15	Click or tap here to enter text.	Name, Title

Data Release Application
Limited and Identifiable Extract

Data Requestor Details

General Project Details

Project Title:	Efficiency in Healthcare Delivery: Measurement and Policy Design
Application Start Date:	3/1/2024
Requested Project Delivery Date:	5/17/2024
Client Organization:	New York University, Stern School of Business
Client Organization Address:	44 West 4th St, New York, NY 10012
To be completed by CIVHC staff	
CIVHC Contact:	Lucía Sanders
Project Number:	24.29
Condensed Project Title:	Efficiency Healthcare Delivery

Project Contacts

Project Contact Name:	Michael J. Dickstein
Title:	Associate Professor
Email:	mjd19@nyu.edu
Phone Number:	845-239-2767
Analytic Contact Name:	Pierre Bodere
Title:	Assistant Professor (Summer 2024)
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Phone Number:	Click or tap here to enter text.
Invoice Contact Name:	David Frederick
Title:	Manager of Research Databases and Windows Applications
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Data Release Fee Signatory

Name:	David Frederick
Title:	Manager of Research Databases and Windows Applications
Email:	research@stern.nyu.edu

Data Use Agreement Signatory

Name:	Razi Ahmad
Title:	Associate CIO, Security, Infrastructure, and Research Computing
Email:	razi@stern.nyu.edu

Data Release Application
Limited and Identifiable Extract

Project Schedule and Purpose

Proposed Project Start Date[1]:	5/3/2024
Anticipated Project End Date:	5/3/2029
Proposed Publication or Release Date:	5/3/2026

1. Detail the specific research question(s) you are trying to answer or problem(s) you are trying to solve with this data request. Please list and number the individual questions.

> 1. How do the features of a health insurance plan—including provider network design and patient out-of-pocket costs—affect an enrollee's access to surgical care? Do these factors generate differences in access by demographic group?
> 2. How do the features of a health insurance plan—including provider network design and patient out-of-pocket costs—affect an enrollees' (a) medical outcomes/recovery time and (b) current and future health spending following surgical care?
> 3. How do waiting times for surgical care differ across specific surgical procedures and demographic groups? How would alternative regulations of insurance markets affect these wait times, and thereby affect a patient's health outcome and spending level? Would these policies generate differential gains/losses for patients of different demographics, socioeconomic status, or geographic location?
> 4. How do health insurance market regulations, such as network adequacy rules, affect access to healthcare services? Do these effects differ across demographic groups?

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

> Our methodological approach involves several steps. First, we plan to implement a machine learning approach to quantify wait times for surgical care. Based on our past research work using national claims data from employer-sponsored insurance plans, we have developed and tested a procedure that exploits inpatient, outpatient, and pharmaceutical claims to predict the start to a patient's wait time for a set of surgical procedures. We will deploy our machine learning tool in the CO APCD to approximate wait times for various services in Colorado. Descriptively, we can quantify differences in this wait time across geographies, and for patients that differ in their insurance plan design. Second, we propose an empirical strategy that will help us establish a causal link between wait time and patients' health and spending outcomes. Our strategy exploits randomness in the timing of an individual patient's diagnosis; if patients become ill at a time period in which providers in their local market and insurance network are at or near capacity, they will experience longer waits independent of their health status. To

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[1] After all required documents have been signed and the Data Release Review Committee has approved the project, 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.

> implement this strategy, we need information on providers' overall volumes at different points in time, which we plan to measure in the CO APCD. Lastly, we plan to build economic models that feature (a) households' demand for insurance, (b) patients' choices of providers for surgical procedures when needed, and (c) insurers' responses to plan enrollment, provider utilization, and overall medical costs. In our proposed model, insurers can respond to patient usage by changing their plan design, network structure, or premiums to affect both spending and enrollment. The investigators on this project have experience with machine learning tools and with designing economic models that can allow a researcher to predict the key outcomes—like health spending and plan enrollment—that might result from new regulations enforced on insurance markets.

6. Explain how this project will benefit Colorado and its residents.[2]

> Using the Colorado all payer claims data, one project aim is to develop and apply a new methodology to measure wait times for surgical procedures. This project will benefit Colorado and its residents in at least three ways. First, we can recover wait times for patients in public and private health insurance plans in both rural and urban markets in the state. With this measurement, policymakers will gain a clearer picture of average wait times in the state and whether the length of these waits varies systematically by demographic group or geographic location. Second, we plan to build an economic model that will allow us to quantify how insurance plan design affects access to surgeries, including through the use of gatekeeping and narrow network health plans. Combining the model with Colorado data, our results can speak to possible insurance market reforms that can benefit patients in the state. Finally, we propose a methodology that will allow us to measure the causal effects of wait time on patient outcomes, including total spending, patient morbidity and mortality, and the use of addictive medications. Public and private insurers in the state can then target reductions in wait times for those specific surgeries and patient populations for which waiting leads to an increase in long-run costs or worsened health.

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

> Our project has several intended deliverables that can contribute directly to improving health care quality for Colorado residents. By providing new and comprehensive measures of wait times to surgery for Colorado residents, we can shed light on specific procedures and population subgroups for whom access to care is more limited. By illustrating a causal link between waiting and specific measures of health outcomes or health spending, we can provide policymakers a roadmap for how to limit the costs of waiting. In addition, state laws, such as network adequacy laws, often serve as means to improve access to needed care and thereby improve patient outcomes, particularly for vulnerable populations. We hope to be able to share our model estimates to help inform any ongoing legislative or regulatory efforts toward reforms in the insurance market,

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[2] 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.

> including in the Connect for Health Colorado marketplace and the Health First Colorado Medicaid program.

8. 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.

> A necessary first step to improve health equity is to identify those dimensions of healthcare delivery that leave vulnerable populations underserved. Our project develops a methodology to measure timely access to surgical care in insurance claims data. This method will enable us to detect those specific procedures and patient populations for whom delays are the most significant, and to quantify the causal impact of the measured delays on health outcomes. In addition to this measurement, we intend to develop an economic model of patient demand for insurance and healthcare services, as well as insurers' plan design choices. We can use this model, along with data, to evaluate possible reforms to the insurance market. In these counterfactual environments, we plan to study the effect of market reforms–such as changes to gate-keeping rules or insurance network requirements–on both overall patient outcomes as well as the disparity in outcomes by demographic group.

Data Release Application
Limited and Identifiable Extract

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 Member Match File Data Element Selection Form. Answer the following:

Who will receive the Member Match File?
Please specify here.

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 to create a Control Group as part of this project?

☐ No
☒ Yes. Consult with your CIVHC Contact about completing a Control Group Data Element Selection Form.

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)?
We may link the following public-use datasets to the APCD: (1) American Community Survey (ACS), (2) National Plan and Provider Enumeration System (NPPES), (3) HIX Compare data from the Robert Wood Johnson Foundation

Who will perform the data linkage?
Principal investigators

What identifying data elements will be used to perform the data linkage?
We will link using the following data elements: (1) ACS will link by both member zip code/ "Member_Zip_Cd" or provider zip code/"Zip_Cd" (2) NPPES will link using provider NPI/"National_Provider_ID" (3) HIX Compare we will link aggregate plan characteristics to individual market private insurance plans by metal tier, year, and broad geography.

What non-CO APCD data elements will appear in the new linked file?
From ACS, we hope to merge by geography (zip) to include aggregate data on income, insurance status, and family demographics in a geographic area. From NPPES, we hope to include information on a provider's specialty, years in practice, and medical training. From HIX Compare, we hope to include aggregate plan characteristics by plan type (e.g. weighted average of individual market gold plan premiums across payers)

Data Release Application
Limited and Identifiable Extract

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

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 Census Tract	☐ Member County
☐ Member City	☒ Member Eligibility Date	☒ Employer Tax ID
☒ Member Dates of Service		
Available for Identifiable extracts only (see also Identifiable Data Use Approval):		
☐ Member Name	☐ Member Date of Birth (if requesting more than year only)	
☐ Member Geocoded Address	☐ Member Geocoded 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.[3]		
We request the member 5-digit zip code, census tract, and block to be able to quantify the distance to a provider and define the set of providers that a member may visit to seek surgical care within the state. We request the members' dates of service to be able to quantify the wait times that patients realize for each surgical intervention they undertake. The wait time will cumulate waits for all types of medical services leading to the date of surgery, including generalist and specialty office visits as well as pharmacy visits. We request the member eligibility date to understand, both for those patients who do and do not undergo surgery, what time period they may have been eligible for payment for surgical care. We request the employer tax id to be able to pool all members in the same employer-sponsored insurance plan together to better understand the implictions of alternative plan designs.		

Line(s) of Business

- ☒ Commercial Payers
- ☒ Health First Colorado (Colorado's Medicaid and CHP+ programs)[4]
- ☒ Medicare Advantage
- ☒ Medicare Fee for Service (FFS)[5]

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[3] 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.
[4] Medicaid-only data requests must be approved by the Colorado Department of Health Care Policy and Financing.
[5] Medicare FFS data are not available for all requests and must go through a separate approval process.

Data Release Application

Limited and Identifiable Extract

Year(s) of Data

☐ 2012	☐ 2013	☐ 2014	☒ 2015	☒ 2016	☒ 2017
☒ 2018	☒ 2019	☒ 2020	☒ 2021	☒ 2022	☐ 2023[6]

Claim Types

☒ 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	

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):
Please specify here.

Procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):
See ICD and CPT tabs in Data Element Selection Form

Drug(s) (list pharmacy NDC and/or HCPCS codes):
Please specify here.

Facility Type(s):
Please specify here.

Facilities (list NPIs and/or Pharmacy IDs):
Please specify here.

Facilities within these geographical areas (list county, zip code, Census Tract, etc.):
Please specify here.

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[6] This year's data is incomplete. Consult with your CIVHC Contact to find out what data is available at the time of your request.

Data Release Application

Limited and Identifiable Extract

Provider Type(s):
See Provider Types tab in Data Element Selection Form

Provider(s) (list NPIs):
Please specify here.

Providers within these geographical areas (list county, zip code, Census Tract, etc.):
Please specify here.

Specific payers (minimum of five):
Please specify here.

Other claim specification:
We request claims for providers according to two criteria in order to measure congestion of providers. First, we request claims for all providers and facilities that diagnose or treat patients with the ICD/CPT procedures on our list at any point in the time span of our data request. For this specific set of providers, we request an extract of all of claims associated with the provider id, including but not limited to the claims for the set of ICDs/CPTs we specify. Second, we request all available claims for providers that fall under the 'provider types' categories we specify. For these providers, we do not condition on ICDs/CPTs. These include primary care providers and providers of laboratory and imaging services.

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:		
18 years of age +		
☒ At the time of service.	☐ At year end	☐ By another anchor date: Please specify here.

With these ICD Diagnosis Code(s):
Please specify here.

Who have had the following procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):
See CPT and ICD tabs in Data Element Selection form. In addition to the claims pulled at the provider level, we request claims for all individuals who have ever been recorded in the time span of the data with ICD-CPT procedures in our specified list. For these patients, aged 18+, we request all available claims. That is, though the

set of patients is limited to those with a CPT or ICD on our list, we request all of their claims, whether the claims records one of our specific ICD/CPTs or not.

Within these geographical areas (list county, zip code, Census Tract, etc., in keeping with your selected Protected Health Information):

Please specify here.

Value-Add Data Elements

Indicate which (if any) of the following value-add options you would like included with this extract:

- ☒ Medicare Severity Diagnosis Related Group Codes (MS-DRGs)
- ☒ 3M All Patient Refined Diagnosis Related Group Codes (3M APR DRGs)
- ☒ Medicare Repricer
- ☐ Fields from the American Community Survey:

    Please specify here.

Data Release Application

Limited and Identifiable Extract

Additional Documentation

Data Element Selection Form

The Data Release Application must be accompanied by a completed Data Element Selection Form to be reviewed internally and by the Data Release Review Committee. 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.

☐ 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, if applicable.

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

State of Approval

☐ Approval request not yet submitted.
   Anticipated submission date: Date

☒ Approval request submitted and under review.
   Anticipated project approval date: 3/18/2024

☐ 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 Release Application

Limited and Identifiable Extract

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.

☒ Submitted to CIVHC on **2/19/2024**
☐ Approved by CIVHC on Date

Client Acknowledgements and Signatures

Change Agent Index

CIVHC can publicly share the Client Organization's name in its Change Agent Index.

☒ Yes   ☐ No

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 suppression rules, 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[7] must be completed and returned to DataCompliance@CIVHC.org by 6/2/2029 based on the Anticipated Project End Date.

Data Users

List any individuals that will be working with the data. The Data Use Agreement must be updated through your CIVHC Contact every time individuals are granted access to the data during the course of the project.

Name	Role	Organization
Michael Dickstein	Co-PI	New York University
Pierre Bodere	Co-PI	New York University/Yale University
Guillaume Frechette	Co-PI	New York University
Guido Deiana	Research assistant	New York University
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[7] Available on the Data Release Application and Documents page of CIVHC's website under *Privacy, Security, and Regulatory Information*.

Data Release Application
Limited and Identifiable Extract

Data Release Application Version Approvals

Checkpoint 1: Preparation for CIVHC's internal Application Review Meeting

The Client Organization has reviewed and confirms that V.02 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	LS	Initials:	MD
Name:	Lucía Sanders	Name:	Michael Dickstein
Title:	Key Account Manager	Title:	Associate Professor
Date:	3/11/2024	Date:	3/13/2024

Checkpoint 2: Preparation for presentation to the Data Release Review Committee

The Client Organization has reviewed and confirms that V.04 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	LS	Initials:	MD
Name:	Lucía Sanders	Name:	Michael Dickstein
Title:	Key Account Manager	Title:	Associate Professor
Date:	3/25/2024	Date:	3/25/2024

Checkpoint 3: Final approval to begin project production

The Client Organization has reviewed and confirms that V.00 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Click or tap here to enter text.	Name:	Click or tap here to enter text.
Title:	Click or tap here to enter text.	Title:	Click or tap here to enter text.
Date:	Date	Date:	Date

Data Release Application

Limited and Identifiable Extract

Data Element Selection Form Version Approvals

Checkpoint 1: Preparation for CIVHC's internal Application Review Meeting

The Client Organization has reviewed and confirms that V.02 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	LS	Initials:	MD
Name:	Lucía Sanders	Name:	Michael Dickstein
Title:	Key Account Manager	Title:	Associate Professor
Date:	3/11/2024	Date:	3/13/2024

Checkpoint 2: Preparation for presentation to the Data Release Review Committee

The Client Organization has reviewed and confirms that V.05 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	LS	Initials:	MD
Name:	Lucía Sanders	Name:	Michael Dickstein
Title:	Key Account Manager	Title:	Associate Professor
Date:	3/25/2024	Date:	3/25/2024

Checkpoint 3: Final approval to begin production

The Client Organization has reviewed and confirms that V.00 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Click or tap here to enter text.	Name:	Click or tap here to enter text.
Title:	Click or tap here to enter text.	Title:	Click or tap here to enter text.
Date:	Date	Date:	Date