Data Release Application

Limited and Identifiable Extract

Application Navigation

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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
12/19/2023	V.01	Initial version drafted with client.	Lucía Sanders, Key Account Manager
1/12/2024	V.02	Updates after CSSI team review and client follow up.	Lucía Sanders, Key Account Manager
1/22/2024	V.03	Updated PHI elements to remove latitude/longitude and geocoded address.	Lucía Sanders, Key Account Manager
1/24/2024	V.04	Updated project purpose and methodology for clarity after review with CIVHC Data Analysts and Compliance.	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

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Data Requestor Details

General Project Details

Project Title:	Evaluating Heath Disparities and Social Determinants of Health in a Broad Spectrum of Surgical Patients
Application Start Date:	11/13/2023
Requested Project Delivery Date:	3/8/2024
Client Organization:	University of Colorado Anschutz School of Medicine
Client Organization Address:	12631 E 17th Ave, Room 6001, Aurora, CO Room 80013
To be completed by CIVHC staff	
CIVHC Contact:	Lucía Sanders
Project Number:	24.21
Condensed Project Title:	Evaluating Health Disparities

Project Contacts

Project Contact Name:	Ariel Wolf
Title:	MD
Email:	Ariel.wolf@cuanschutz.edu
Phone Number:	3056069596
Analytic Contact Name:	Michael Bronsert
Title:	PHD, MS
Email:	michael.bronsert@cuanschutz.edu
Phone Number:	Click or tap here to enter text.
Invoice Contact Name:	Catherine Velopulos
Title:	MD, MPH
Email:	catherine.velopulos@cuanschutz.edu
Phone Number:	3526829424

Data Release Fee Signatory

Name:	Chrissy Alexander
Title:	Senior Purchasing Agent
Email:	Chrissy.alexander@cu.edu

Data Use Agreement Signatory

Name:	Alison Lakin
Title:	Vice Chancellor for Regulatory Compliance
Email:	Alison.lakin@cuanschutz.edu

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Project Schedule and Purpose

Proposed Project Start Date[1]:	3/8/2024
Anticipated Project End Date:	3/8/2029
Proposed Publication or Release Date:	3/8/2027

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.

> The purpose of our study is to demonstrate the utility of the Centers for Disease Control and Prevention's (CDC) Social Vulnerability Index (SVI) in highlighting health disparities in access to preventative care, advanced disease at time of presentation, and resultant worse surgical outcomes. With the challenges of quantifying the complex, numerous individual-level measures of social determinants of health, growing evidence supports neighborhood vulnerability as a valid estimate. The score was initially created by the CDC for disaster planning to identify populations most vulnerable during natural disasters and in need of aid. It is calculated from geocoded addresses at the census-tract level, including data on 15 variables placed into 4 categories: socioeconomic status, household composition or disability, minority status, and housing or transportation. It is publicly available and regularly updated with census information. Thus, this score provides a facile tool in the estimation of populations at risk for adverse health outcomes.
>
> 1. Determine if an association between SVI and risk-adjusted complications exists in a broad spectrum of surgical patients and assess areas to improve health equity and access to care in the state of Colorado. It is vital to include CPT codes across a range of specialities in order to demonstrate if SVI can be applied to a vast array of specialties and therefore implemented broadly to improve patient outcomes, which is the aim of our research.
>   a. Evaluate whether patients with increased SVI are less likely to obtain cancer screening and therefore present with more advanced disease at presentation leading to increased burden on patients as well as the healthcare system.
>   b. Determine if increased SVI leads to increased rates of conversion to open procedures from common laparoscopic general and specialty (Vascular, pediatric, plastics, thoracic, gynecology, ENT, urology, orthopaedic) procedures and therefore increased complication rates.

[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.

2. Perform a longitudinal analysis looking at the effect of COVID 19 on trends in outcomes as mentioned above (year prior to 2020 and thereafter).

3. Perform a longitudinal analysis looking at the use of SVI as an independent risk factor for surgical outcomes (as mentioned above) by looking at trends during and after the initiation of the Affordable Care Act (ACA). This allows us to demonstrate that patients with high SVI demonstrate worse outcomes despite access to insurance. Claims data from years 2012-2023 is required to perform this analysis.

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

Patients who have undergone an emergent, urgent, or elective operations during the years 2012 to 2023 will be identified using CPT and ICD10 codes from the CO APCD. In addition, patients undergoing screening for cancers that require surgical resection will be identified using CPT, NCD, ICD10 codes for labs, imaging, and diagnoses respectively. The R Program for Statistical Computing version will be used to convert census tract into SVI. Because this exists in R and is easily accessible, which it is not on other platforms such as SAS or Stata, we use this to convert the geolocation to the SVI. Patients will be separated into quartiles (0-24; 25-49; 50-74; 75-100) and cohorts of high SVI (>75th percentile) or low SVI (<75th percentile) and outcomes data will be collected. In addition, CO APCD data on demographics, comorbidities, patient disposition, length of stay, costs of care, insurance status, distance traveled, and hospital demographics will be used to perform multivariable regression.

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

It has been shown that social circumstances impact access to timely surgical care as well as postoperative outcomes. However, the majority of studies on healthcare disparities in the United States have focused on single variables such as patient race, insurance status, or other measures of social deprivation. There is growing research on the association of more comprehensive measures of healthcare disparities and surgical outcomes using the SVI, which is easily obtained from census tract data. This study will provide valuable information from multiple institutions in the entire state of CO on outcome disparities by utilizing a more comprehensive marker, SVI, that accounts for both socioeconomic and demographic factors putting a community at risk. While we are in the process of pursuing similar studies at a single institution level, this study would allow us to to gain generalizable knowledge regarding modifiable factors. Additionally, knowledge from this

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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.

study would allow us to create a model using a patient's social vulnerability index in order to easily identify patients admitted to the hospital who are at increased risk for complications and patients at risk for not receiving screening needed to identify cancers that can be intervened on surgically if caught earlier in disease progression. This model will help identify those Colorado residents at highest risk for adverse health outcomes, enabling the future mobilization of resources targeted to their needs.

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

Our project aims to advocate for patients with increased social vulnerability. Our hypothesis is that increased SVI leads to more severe presentation of disease and therefore increased morbidity and mortality. We also suspect that socially vulnerable patients have increased barriers to obtaining preventative care that would have identified surgical problems earlier in disease progression leading to worse health outcomes. Therefore, if increased SVI was mandated to be calculated by electronic medical records (EMRs) this could lead to early recognition of patients at increased risk for post-operative complications, length of stay (LOS), readmissions and more. Early recognition allows mobilization of resources from early index admission and therefore a shift towards preventative model versus a reactive one. Preventative care leads to decreased overall spending, increased healthcare value, and improved healthcare outcomes. Furthermore, addressing patients with increased SVI from the population level would decrease the need for emergent intervention with a shift towards elective procedures overall for Colorado residents, which is beneficial from both a patient-centered and cost perspectives.

5. 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 centers around social determinants of health, and the substantial impact they have on the health of CO residents. The purpose of our study is to demonstrate the utility of the SVI in highlighting health disparities in access to preventative care, advanced disease at time of presentation and resultant worse surgical outcomes. With the challenges of quantifying the complex, numerous individual-level measures of social determinants of health, growing evidence supports neighborhood vulnerability as a valid estimate. The score was initially created by the CDC for disaster planning to identify populations most vulnerable during natural disasters and in need of aid. It is calculated from geocoded addresses at the census-tract level, including data on 15 variables placed into 4 categories: socioeconomic status, household composition or disability, minority status, and housing or transportation. It is publicly available and regularly updated with census information. Thus, this score provides a facile tool in the estimation of populations at risk for adverse health outcomes. We intend to add this valuable information to make necessary

changes within the EMR system to help risk-stratify patients and connect them with necessary resources, improving health equity.

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:

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What is (are) the other data source(s)?
Please specify here.

Who will perform the data linkage?
Please specify here.

What identifying data elements will be used to perform the data linkage?
Please specify here.

What non-CO APCD data elements will appear in the new linked file?
Please specify here.

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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]		
Member census tract is necessary in order to code for the Social Vulnerability Index. We will destroy patient census tract thereafter. Member date of service, including admit date and discharge date, are needed in order to calculate 30 day readmission rate, length of stay, etc. Member eligibility date is needed to understand when a patient received coverage, and whether the patient had coverage prior to admission to a hospital or received coverage during admission (e.g., emergency Medicaid).		

Line(s) of Business

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

Year(s) of Data

☒ 2012 ☒ 2013 ☒ 2014 ☒ 2015 ☒ 2016 ☒ 2017

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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.

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☒ 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):
Please specify here.
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.
Provider Type(s):
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.

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:
Please specify here.

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:		
Please specify here.		
☐ At the time of service.	☐ At year end	☐ By another anchor date: Please specify here.
With these ICD Diagnosis Code(s):		
See tab "ICD 10 Diagnoses" on DESF. (Includes gallbladder, appendix, acute abdomen, intestinal obstruction, gastroduodenal ulcer perforation, diverticulitis, breast cancer, colon cancer, lung cancer, cervical cancer, pancreatic cancer, hepatocellular, gastric, and nicotine dependence.)		
Who have had the following procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):		
See tab "CPT Codes" on DESF.		
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.

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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: 1/29/2024

☐ 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 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 **12/14/2023**

☐ 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.

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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 4/7/2029 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
Dr. Catherine Velopulos	PI	University of Colorado Anschutz School of Medicine
Dr. Quintin Myers	Co PI	University of Colorado Anschutz School of Medicine
Dr. Ariel Wolf	Research fellow	University of Colorado Anschutz School of Medicine
Dr. Denise Garofalo	Research fellow	University of Colorado Anschutz School of Medicine
Dr. Charlotte Heron	Research fellow	University of Colorado Anschutz School of Medicine
Dr. Christina Stuart	Research fellow	University of Colorado Anschutz School of Medicine
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Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

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

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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:	AW
Name:	Lucía Sanders	Name:	Ariel Wolf
Title:	Key Account Manager	Title:	Research Fellow
Date:	1/22/2024	Date:	1/28/2024

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:	AW
Name:	Lucía Sanders	Name:	Ariel Wolf
Title:	Key Account Manager	Title:	Research Fellow
Date:	1/24/2024	Date:	1/28/2024

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

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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:	AW
Name:	Lucía Sanders	Name:	Ariel Wolf
Title:	Key Account Manager	Title:	Research Fellow
Date:	1/22/2024	Date:	1/28/2024

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

The Client Organization has reviewed and confirms that V.03 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	LS	Initials:	AW
Name:	Lucía Sanders	Name:	Ariel Wolf
Title:	Key Account Manager	Title:	Research Fellow
Date:	1/24/2024	Date:	128/2024

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