



Data Release Application

Limited and Identifiable Extracts

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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 (full name, complete title)
9/18/2024	V.01	Initial version drafted with client.	Kimi Landry, Research/Eval Analyst
10/3/2024	V.02	Edits made my researcher.	Alejandro Amill-Rosario, PhD, MPH
10/14/2024	V.03	Edits made after Internal App Review	Kimi Landry
	V.04		
	V.05		
	V.06		
	V.07		
	V.08		
	V.09		
	V.10		

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Data Requestor Details

General Project Details

Project Title:	Impact of Public Health Emergency Policies on Medication Use and Follow-up Care Among Youth with Attention Deficit and Hyperactivity Disorder
Application Start Date:	9/18/2024
Requested Project Delivery Date:	12/23/2026
Client Organization (legal name):	University of Maryland Baltimore
Client Organization Address:	
To be completed by CIVHC staff	
CIVHC Contact (full name, complete title):	Kimi Landry
Project Number:	24.515.2
Condensed Project Title:	HD4A UMB F128568

Project Contacts

Project Contact Name:	Alejandro Amill-Rosario
Title:	Director Health Services Research at UMB
Email:	aamill-rosario@rx.umaryland.edu
Phone Number:	410-706-5168
Analytic Contact Name:	See above.
Title:	
Email:	
Phone Number:	

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Invoice Contact Name:	RWJF
Title:	
Email:	
Phone Number:	
Data Release Fee Signatory:	RWJF
Title:	
Email:	
Phone Number:	
Data Use Agreement Signatory:	Stacey L. Boyd
Title:	Manager, Contracts
Email:	sboyd001@umaryland.edu
Phone Number:	410-706-0639

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Project Schedule and Purpose

Proposed Project Start Date ¹ :	7/25/2024
Anticipated Project End Date:	8/12/2026
Proposed Publication or Release Date:	

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 Public Health Emergency (PHE) policy ensured healthcare access during the COVID-19 pandemic. The Medicaid and private payer policy changes implemented as part of the PHE expanded reimbursement for telehealth and telemental health (mental healthcare delivered via telehealth modalities [TMH]). The PHE\TMH expansion increased the capacity to care for those in need. However, it is less known how this change impacted healthcare access, quality, and spending for youth with attention deficit and hyperactivity disorders (ADHD). This study will assess how these policy changes affected access to ADHD-related healthcare and medication, the quality of ADHD care, and associated healthcare spending. By leveraging data from the Colorado All-Payer Claims Database (CO APCD) from 2018 to 2023, the research will address gaps in understanding how the PHE policy reimbursement rollback will affect access to care.

Individual research questions:

- i. What was the immediate impact of the PHE/telehealth policy on ADHD medication dispensing and healthcare utilization for youth and young adults aged 4-21 years?
- ii. Did the PHE/telehealth policy impact the quality of ADHD care, specifically in terms of continuity of medication and follow-up care?
- iii. Did healthcare spending for youth and young adults with ADHD increase with telehealth compared to in-person care after the PHE/telehealth policy was enacted?

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.

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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.

1. Study Design:

- This is a quasi-experimental study design that leverages the natural experiment occurring with the implementation of the PHE policy (population intervention). The PHE enactment occurred nationally and in Colorado in March 2020 and continued through May 2023.

2. Data Source:

- The study will utilize the Colorado All-Payer Claims Database (CO APCD) for data spanning from 2018 to 2023. This dataset includes comprehensive claims data covering various lines of business, including commercial and Medicaid.
- Data Elements: The researchers will extract data on medication prescriptions, healthcare visits, and overall healthcare spending for youth with ADHD. They will specifically use claims data for outpatient, professional, and pharmacy services, as well as member dates of service and eligibility.

3. Study Population and Analytical Sample:

- The study population is persons 4-21 years-old living in Colorado who were enrolled in a private insurance plan or Medicaid.
- The analytic sample is derived from the study population. We will identify those with any ADHD-related healthcare services, which we define as medical claims with an ADHD diagnosis, or an ADHD medication pharmacy claim during the study period.
- After selecting the analytical sample, we will extract all their healthcare services (e.g., visits and procedures) and medication utilization records related to ADHD and all causes. This information is critical to answering the project research questions.
- The analytic sample will allow us to comprehensively evaluate treatment trends for ADHD.
- The study population is critical to address population-level trends of the policy impact among all youth in the CO APCD and to estimate access, quality, and spending measures specific to those diagnosed with ADHD.

4. Study Outcomes:

- Research question (i). – Healthcare utilization: Researchers will analyze changes in the monthly proportion of youth with an ADHD visit among the CO youth and in the monthly proportion who received an ADHD medication dispensing before and after the policy changes.
- Monthly proportions of ADHD visits are calculated as the aggregate number with ADHD diagnosis (numerator) divided by the total number enrolled in the health plan (denominator) in the same month.
- Research question (ii). – Quality of Care: Measures of quality are determined by the extent of follow-up visits after initiating an ADHD medication. This study will measure this as the proportion of ADHD visits after the first ADHD medication

dispensing and changes in this proportion over time after the telehealth policy. Poor quality care can result in hospitalization and ER visits. This study will evaluate changes in the proportion of ER or inpatient ADHD care, either ADHD-related or all-cause, over the study period to assess changes after the telehealth policy.

- Research question (iii). – Healthcare Spending: Total healthcare spending for ADHD-related care, or all causes, among youth with ADHD. This will involve comparing spending levels before and after the policy change.

5. Statistical Methods:

- Descriptive Analysis: This includes summary statistics (e.g., means and standard deviations, proportions) and graphical plots of the outcome measures for each month/year of the study period for our planned trend analysis of the policy impact. Subgroup comparisons by type of health insurance and other key covariates will evaluate variations in trends before and after the PHE policy change.
- Inferential Analysis: A single-group interrupted time series (ITS) regression will estimate the policy impact on each ADHD outcome. The ITS design is used for population-level health evaluations of public health interventions or natural events that occurred at a clearly defined point in time, such as the COVID-19 PHE enactment. The ITS uses aggregate data to evaluate changes in the outcomes pre-PHE (before 03/2020), PHE (03/2020), post-PHE year 1 (03/2021), and two years post-PHE (03/2022).
- Covariates: Essential to adjust for confounding, baseline indicators (binary yes/no) will include demographics, other mental health disorders, and health insurance (i.e., Medicaid, commercial). Provider characteristics will include specialty type, sex, and area of practice. The TMH-ADHD care post-PHE interruption will be three mutually exclusive groups (telemental health–ADHD, in-person – ADHD care received via in-person only, and hybrid care – ADHD care received via both telepsychiatry and in-person).

6. Interpretation and Reporting:

- Results Interpretation: The findings will be interpreted in the context of the policy changes, assessing whether the expanded telehealth options led changes in ADHD healthcare utilization, care quality, and spending.
- Policy Implications: The study will provide insights on the impact of telehealth policy on ADHD care access and quality, with implications for future policy decisions regarding telehealth services and mental health care for youth.

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

This project will benefit Colorado and its residents by evaluating the impact of telehealth policies on ADHD care. It will provide insights into whether the transition to telehealth improved access to

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.

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ADHD medication use, the quality of care continuity, and costs, particularly for the underserved and disadvantaged. By identifying the effects of these policies, the study can better inform policy decisions on retaining or expanding telehealth reimbursement and on supporting more efficient use of healthcare resources. Ultimately, this will lead to better mental health outcomes for youth with ADHD and potentially lower overall healthcare costs in the state.

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

The project aims to improve healthcare quality, value, and outcomes for Colorado residents by assessing how telehealth policies impact the management of ADHD. Without access to care, those with ADHD are at risk of impaired functioning at school and home, in interpersonal relationships, and throughout adulthood. Pre-pandemic, Colorado was well below the national average in access to behavioral therapy and ADHD medication. Thus, it is imperative to know whether the telehealth policy changes led to improvements in care for Coloradans with ADHD. The downstream policy effects are improved care coordination, reduced barriers to care, and timely interventions. The evidence generated by this research has the potential for a high impact on optimizing health outcomes, resource utilization, and costs.

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 addresses health equity by examining the impact of telehealth policies on ADHD management across various demographic groups, including those from underserved or disadvantaged communities (i.e., Medicaid). By evaluating telehealth policy's impact on access, quality, and cost, the findings from this research seek to uncover disparities. Should we find inequities for minoritized or marginalized groups, then this will inform where policy is needed to address and mitigate such disparities and reduce gaps in health equity. This approach can help ensure that advancements in ADHD treatment benefit all individuals, regardless of socioeconomic status or geographic location, contributing to more equitable healthcare delivery.

6. 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.

This project will generate scholarly material (e.g., peer-reviewed publication) under open access agreements for broad dissemination. We anticipate a range of audiences will be interested in study findings, including health services researchers, academic researchers, hospital/health plan administrators, officials, providers, clinicians, pharmacists, policymakers, youth advocates, associations, organizations, foundations, and journalists, plus Coloradans. Other communication dissemination materials proposed in this project include websites, social media, blogs

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(AcademyHealth), email, and listservs (Colorado Health Foundation). All materials will be submitted to CIVHC for approval.

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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 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.

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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?
Who will perform the data linkage?
What identifying data elements will be used to perform the data linkage?
What non-CO APCD data elements will appear in the new linked file?

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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 (PHI)

Indicate which [Protected Health Information](#) data elements you require for your project purpose:

Available for Limited and Identifiable extracts:		
<input type="checkbox"/> Member 5-Digit Zip Code	<input type="checkbox"/> Member County	<input type="checkbox"/> Member City
<input checked="" type="checkbox"/> Member Dates of Service	<input type="checkbox"/> Member Eligibility Dates	<input type="checkbox"/> Employer Name
<input type="checkbox"/> Member Census Tract	<input type="checkbox"/> Member Census Block	<input type="checkbox"/> Member Census Block Group
Available for Identifiable extracts only (see also Identifiable Data Use Approval):		
<input type="checkbox"/> Member Name	<input type="checkbox"/> Member Date of Birth (if requesting more than year only)	
<input type="checkbox"/> Member Street Address	<input type="checkbox"/> Member Latitude and Longitude	
<input type="checkbox"/> Employer Tax ID		

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Provide detailed justification for the inclusion of all PHI data selected above, and explain how its inclusion meets the [Minimum Necessary Requirement](#).³

The inclusion of member dates of service is essential for our health care analysis, meeting the HIPAA Privacy Rule's minimum necessary standard. This data element is vital for accurately tracking patient interactions and understanding healthcare utilization patterns. By limiting the data to specific service dates, we ensure the information is minimal yet sufficient to achieve our research objectives, maintaining compliance with HIPAA guidelines and protecting patient privacy. **Date of service:** This data element for the interrupted time study design is critical to determine the month of ADHD health care with respect to the public health emergency policy enactment and across periods from 2018 to 2023. The date of service will be used to define the follow-up period for measuring the outcomes and look-back periods to account for baseline characteristics.

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

- | | | | | | |
|--|--|--|--|--|---|
| <input type="checkbox"/> 2012 | <input type="checkbox"/> 2013 | <input type="checkbox"/> 2014 | <input type="checkbox"/> 2015 | <input type="checkbox"/> 2016 | <input type="checkbox"/> 2017 |
| <input checked="" type="checkbox"/> 2018 | <input checked="" type="checkbox"/> 2019 | <input checked="" type="checkbox"/> 2020 | <input checked="" type="checkbox"/> 2021 | <input checked="" type="checkbox"/> 2022 | <input checked="" type="checkbox"/> 2023 ⁶ |

Claim Type(s)

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Inpatient Facility | <input checked="" type="checkbox"/> Outpatient Facility | <input checked="" type="checkbox"/> Professional |
| <input checked="" type="checkbox"/> Pharmacy | <input type="checkbox"/> Dental | |

Financial Detail by Line Item

- | | | |
|--|--|---|
| <input type="checkbox"/> Charged Amount | <input checked="" type="checkbox"/> Allowed Amount | <input checked="" type="checkbox"/> Plan Paid Amount |
| <input checked="" type="checkbox"/> Plan Pre-Paid Amount | <input checked="" type="checkbox"/> Member Copay | <input checked="" type="checkbox"/> Member Deductible |
| <input checked="" type="checkbox"/> Member Coinsurance | <input checked="" type="checkbox"/> Total Member Liability | |

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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):

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.

⁶ This year's data is not fully adjudicated.

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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:		
4-21		
<input checked="" type="checkbox"/> At the time of service	<input type="checkbox"/> At year end	<input type="checkbox"/> By another anchor date: <i>Specify here</i>
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.):		

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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):

Income levels, education attainment, employment status, racial and ethnic composition, health insurance coverage rates, urban/rural status

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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: 7/1/2024
- ☒ 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.

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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:	7/10/2024
Date Approved by CIVHC:	7/24/2024

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 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](#)⁷ must be completed and returned to DataCompliance@CIVHC.org by 8/12/2026 based on the [Anticipated Project End Date](#).

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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.

Full Name	Title/Role	Organization
Alejandro Amill-Rosario	Principal Investigator	University of Maryland, School of Pharmacy
Susan dosReis	Co-principal Investigator	University of Maryland, School of Pharmacy
Roderick Rose	Consultant	University of Maryland, School of Social Work
Abree Johnson	Director	University of Maryland, School of Pharmacy, Pharmaceutical Research Computing
Reuben Don	Programmer	University of Maryland, School of Pharmacy, Pharmaceutical Research Computing
Susan Maskery	Programmer	University of Maryland, School of Pharmacy, Pharmaceutical Research Computing
Kathy Ryan	Programmer	University of Maryland, School of Pharmacy, Pharmaceutical Research Computing
Chih-Chun Tung	Programmer	University of Maryland, School of Pharmacy, Pharmaceutical Research Computing

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

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.01	Presented at CIVHC Application Review
V.00	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:		Name:	Stc y
Title:		Title:	
Date:		Date:	

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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.01	Presented at CIVHC Application Review
V.00	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:		Name:	
Title:		Title:	
Date:		Date:	