

Colorado All Payer Claims Database Data Release Application

Thank you for your interest in obtaining data from the CO APCD. As you fill out this application, please let us know if you have any questions or concerns by reaching out to ColoradoAPCD@civhc.org. We are here to help!

Also, please be aware that if you are requesting Protected Health Information (PHI), your request requires a recommendation for approval by the Data Release Review Committee (DRRC). Data elements that are considered PHI under HIPAA are indicated below. If PHI is requested, a CIVHC Account Executive will help you successfully complete an application and navigate the DRRC process.

Please use this application to submit information regarding your request for data from the Colorado All Payer Claims Database (CO APCD). This information will help the Center for Improving Value in Health Care (CIVHC), the Administrator of the CO APCD, answer any questions you have regarding your data request and assist us in helping you complete the data application form.

Note: Please reference the CO APCD Data Elements Request Form found at <http://www.civhc.org/get-data/data-release/> when completing this form.

Introduction: Section 10 CCR 2505-5-1.200.5 describes how the CO APCD Administrator addresses Requests for Data and Reports:

1.200.5.A. A state agency or private entity engaged in efforts to improve health care or public health outcomes for Colorado residents may request a specialized report from the CO APCD by submitting to the administrator a written request detailing the purpose of the project, the methodology, the qualifications of the research entity, and by executing a Data Use Agreement (DUA), to comply with the requirements of HIPAA.

1.200.5. B. A data release review committee shall review the request and advise the administrator on whether release of the data is consistent with the statutory purpose of the CO APCD, will contribute to efforts to improve health care for Colorado residents, and complies with the requirements of HIPAA. The administrator shall include a representative of a physician organization, hospital organization, non-physician provider organization and a payer organization on the data release review committee.

This Data Release Application serves as the written request for information noted in section 1.200.5.A.

PART ONE

Project Information	
Project Title:	22.114 Opioid Addiction Prevention in Members Suffering from depression
Date:	02/25/2021
Organization Requesting Data:	Abzooba Inc
Contact Person:	Christopher J. Evers
Title:	Account Manager
E-mail:	chris.evers@abzooba.com
Phone Number:	(952) 270-8986
Person Responsible for the Project (if different than above):	TBD
Title:	
E-mail:	
Phone Number:	

Additional Data Requested Only / Original request was DE-ID. This original application stays the same with the exception of the below requested additions.

Project Purpose:

Project questions to be discussed with client representative:

Project 1: Prediction of Depression in Patients with Type 2 Diabetes Mellitus for Early Intervention & Better Outcomes

- **Business Problem:**
 - a. 15% to 30% of people with diabetes also have depression, resulting in worse outcomes, such as higher body-mass index and increased risk of other conditions (e.g., coronary artery disease, cerebrovascular disease, etc.)
 - b. Patients with untreated depression and a chronic illness have monthly healthcare costs that average \$560 higher than those with just a chronic disease, according to the American Hospital Association.
- **Project Objective:**
 - a. To develop an AI based solution to predict depression in members suffering from Type 2 Diabetes mellitus.
- **Data Requirement:**
 - **Date Elements:** Data elements such as Admit_Dt, Discharge_Dt, Service_Start_Dt, Service_End_Dt, etc are needed for time-based features such as first date of Diagnosis of Type 2 Diabetes Mellitus, Length of stay during admissions, Dates of services such as encounter, Lab services, Dates of Prescriptions etc.
 - It helps Machine Learning algorithm to understand how a particular disease progressed over time with respect to different diagnosis codes & procedure codes over a stay/visit period.
 - Also prescription date plays very important role to identify correlation between medical codes (diagnosis, procedure, etc) to the medicine prescribed.

- **Project benefits to Colorado or Colorado residents:**

- a. The members/residents suffering from Diabetes Type 2, who are most likely to suffer from depression to be shortlisted and their respective primary care providers to be notified to provide appropriate interventions for prevention of depression thus prevent worsening of health outcomes and lowering costs.

- Please answer all applicable questions below (Note that your project must meet one or more of the Triple Aim criteria below to generate a benefit for Colorado):

- If applicable, how will your project support lowering health care costs?

Ans:

- 1) According to CDC, people with diabetes are 2 to 3 times more likely to have depression than people without diabetes. Only 25% to 50% of people with diabetes who have depression get diagnosed and treated.
- 2) Trends in Costs of Depression in Adults with Diabetes in the United States: Medical Expenditure Panel Survey 2004-2011, based on national sample on adults with diabetes, the expenditure on healthcare was \$2000 - \$3000 higher for unrecognized and asymptomatic depression than no depression, and \$5000 higher for symptomatic depression. (Link: <https://pubmed.ncbi.nlm.nih.gov/26969312/>)
- 3) Also, According to AHA, Patients with comorbid mental health and medical conditions experience higher health care costs, with much of the difference attributable to higher medical, not mental health, expenditures. Patients with untreated depression and a chronic illness have monthly healthcare costs that average \$560 higher than those with just a chronic disease. (Link: https://www.aha.org/system/files/2018-02/AHA_TW_BehavioralHealth_Final.pdf) In this use case we have considered Diabetes Type 2 as the above mentioned chronic disease.
- 4) This project will help in identifying the members/residents amongst the population diagnosed with Diabetes Type 2, who are likely to suffer from depression. The primary care physicians will be notified via email to provide appropriate timely intervention for treating Depression and thus prevent worsening of health outcomes and support lowering health care costs.

- If applicable, how will you project help improve the health of Coloradans?

Ans: According to CDC, People with diabetes are 2 to 3 times more likely to have depression than people without diabetes. Only 25% to 50% of people with diabetes who have depression get diagnosed and treated. In this Project, the members/residents suffering from Diabetes Type 2, that are most likely to suffer from depression can be shortlisted and their respective primary care providers can be notified via email to provide appropriate interventions for prevention of depression thus improving short term and long term health outcomes.

- If applicable, how will your project improve the quality of care or patient experience?

Ans: The primary care provider can plan appropriate intervention such as referring to a mental health provider, counselor or even prescribing anti-depressant medications. This will help in better coordinated care for the patients for improving their health outcomes.

- What tool/mechanism will be used, or how specifically will “outreach” be performed to engage patients and physicians?

Ans:

1. **Data Exploration and Model Development:** We are planning to use industry standard tools and technique for the data exploration and machine learning model development. Our tech stack will include python, pyspark, SQL database, Jupyter Notebook, MLOps Platform for pipeline development and various machine learning algorithms for the model training.
2. **User Dashboard:** A frontend dashboard will be created to interact with the model predictions. The Primary Care Physician can input basic details about patient and his/her medical history details to get the prediction and relevant patient summary on the dashboard for a selected patient.

Project 2: Opioid Addiction Prevention in Members Suffering from Depression

- **Business Problem:**
 - a. Individuals with a history of depression and anxiety, are more likely to become drug-seekers or abuse pain medications.
 - b. Drug addiction interferes with health outcomes for patients being treated for other conditions.
 - c. Treating addiction is very expensive. U.S. healthcare organizations spend more than \$500 billion annually caring for patients suffering from opioid addiction alone.
- **Project Objective:**
 - a. To develop an AI based solution to identify opioid abuse in members who are suffering from depression.
- **Data Requirement**
 - **Date Elements:** Data elements such as Admit_Dt, Discharge_Dt, Service_Start_Dt, Service_End_Dt, etc are needed for time-based features such as Dates of Prescriptions of Opioid, first date of Diagnosis of Depression, Length of stay during admissions, Dates of other services such as encounter, Lab services, etc
 - It helps Machine Learning algorithm to understand how a particular disease progressed over time with respect to different diagnosis codes & procedure codes over a stay/visit period.
 - Also prescription date plays very important role to identify correlation between medical codes (diagnosis, procedure, etc) to the medicine prescribed.
- **Project benefits to Colorado or Colorado residents:**
 - a. The members/residents suffering from Depression, who are more prone to opioid abuse to be shortlisted and their respective primary care providers to be notified to provide appropriate interventions for prevention of opioid addiction thus prevent worsening of health outcomes and lowering costs.

- Please answer all applicable questions below (Note that your project must meet one or more of the Triple Aim criteria below to generate a benefit for Colorado):

- If applicable, how will your project support lowering health care costs?

Ans: Treating addiction is very expensive. U.S. healthcare organizations spend more than \$500 billion annually caring for patients suffering from opioid addiction alone. This project will help to identify high risk Colorado members and patients who are more prone to opioid abuse, which is a leading cause of death in Colorado. This research will help provide timely intervention to help prevent the worsening of health outcomes, thus support lowering health care costs as well for all Coloradans impacted.

Opioid Crisis in Colorado: The Office of Behavioral Health's Role, Research and Resources

<https://cdhs.colorado.gov/behavioral-health/opioid-crisis>

- If applicable, how will you project help improve the health of Coloradans?

Ans: The members and patients suffering from depression, that are more prone to opioid abuse can be identified and a pro-active approach to treatment by their respective primary care providers can help prevent opioid addiction, thus improving health outcomes.

- If applicable, how will your project improve the quality of care or patient experience?

Ans:

For the members/residents who are more prone to be opioid addict, the primary care provider can plan appropriate intervention such managing chronic pain with use of non-opioid medications (NSAIDs), altering the dose of opioids if necessary, managing depression more effectively, etc. This will help with coordination of care, patient engagement and can help physicians care for patients by improving their health outcomes with our research and predictive modelling.

- Do you need a claims data set or would you like a custom report generated by CIVHC that addresses the specific questions/problems your project seeks to address?

Ans: Yes, we will need Claims Data Set.

- Do you need Protected Health Information (PHI)?

- Do you need patient-specific dates (e.g., dates of service or DOB) or 5 digit zip code. If so, this is a request for a **Limited Data Set**.

Ans: No

- Do you need direct patient identifiers such as name, address, or city? If so, this is a request for an **Identifiable Data Set** (requires IRB approval).

Ans: No.

- If you do not require any PHI, please only complete PART ONE of the application.

Please note: your CIVHC representative will work with you to complete **Addendum I – Analyst Supplement** to address data warehouse specific questions.

If you are requesting a Custom Report with analytics to be provided by CIVHC; please stop here and submit the information above to your CIVHC representative.

PART TWO

I. Type of CO APCD Analytic Data Set Requested

Please select the type of data set that you are requesting by checking one of the boxes below (**select only ONE option**). Details on each type of CO APCD data set can be found in *The CO APCD Companion Instruction Guide* (available from your CIVHC representative):

Types of Analytic Data Sets (Please select ONE below)

For users interested in a wide range of data to analyze on their own.

XX Limited Data Set*

*These types of data requests include Protected Health Information (PHI). Under HIPAA, PHI may only be released in limited circumstances for public health, health care operations, and research purposes under the terms of a HIPAA compliant data use agreement (DUA).

2. Requested Data Elements – Limited and Fully Identifiable Data Sets

The CO APCD is committed to protecting the privacy and security of Colorado's health care claims data. The CO APCD will limit the use of the data to purposes permitted under applicable laws, including APCD Statute/Rule and HIPAA/HITECH, to information reasonably necessary to accomplish the project purpose as described in this Application.

Data Element Selection and Justification

If you have not already done so, please use the Data Element Dictionary (DED) to identify the specific data elements that are required for this project. In keeping with the minimum necessary standard established under HIPAA, CO APCD policy is to release only those data elements that are required to complete your project.

Type of Data	Justification for Elements on the DED
Names	NA
Street Address	
City	
Zip Code	
Health Plan Beneficiary Numbers	
Dates (including Day and Month detail.) Specify which date fields are needed and why.	
Provider Identifying Information	

A. Counts, Totals and other Summary Statistics

The CO APCD seeks to provide aggregated summary data whenever possible. Applicants are encouraged to request counts, totals, rates and other summary values whenever such information can reasonably accomplish the purpose of the project (add rows to the table below if necessary). The CO APCD supports the federal CMS minimum cell size suppression policy that requires any cell in any report or data table, printed or electronic, with less than eleven records or observations to be replaced by "Less than eleven" or similar text. You must also apply complementary cell suppression techniques to ensure that cells with fewer than eleven records cannot be identified by manipulating data in adjacent rows and columns.

Field Number and Name	Requested Count or Sum

B. Linkages to Other Data Sets

The CO APCD seeks to ensure that data cannot be re-identified if it is linked to or combined with information obtained from other sources. If this project requires claims line level detail or includes linkages to other databases, or if CO APCD data will be combined with other information, provide a justification for each proposed linkage. Be sure to describe how this will contribute to achieving the project purpose, including whether the project can be completed without this linkage, and the steps you will take to prevent the identification of individual patients:

Will you link the CO APCD data to another data source?

- ☒ No.
- ☐ Yes. If yes, please answer the following questions.
- Which CO APCD identifying data elements will be used to perform the linkage?
 - Once the linkage is made, what non-CO APCD data elements will appear in the new linked file?
 - Have all necessary approvals been obtained to receive and link with the other data files (e.g., IRB or Privacy Board approval)?
 - ☐ Yes, if so please provide copy
 - ☐ In progress, anticipated approval date: _____
 - ☐ No or N/A, reason:

C. Distribution of the Report or Product:
Prior Review by the CO APCD Administrator

If you are producing a report for publication in any medium (print, electronic, lecture, slides, etc.) the CO APCD Administrator must review the report prior to public release. The CO APCD Administrator will review the report for compliance with CMS cell suppression rules; risk of inferential identification; and consistency with the purpose and methodology described in this Application.

- Please describe your audience and how to you will make your project publicly available?

At Abzooba, we have produced a number of healthcare white papers and periodicals regarding the outcomes of our research and data modelling. We will produce manuscripts for peer-reviewed medical journals. We will disclose aggregate results, making sure to suppress results with a cell size smaller than 11 patients. We will not release raw data.

Other Organizations: Do you intend to engage third parties who will have access to the data requested as part of this project? If so, list the organizations below, describe their role(s); and explain why they will be granted access to the requested data.

Organization/Company Name:	NA
Contact Person:	
Title:	
Address:	
Telephone Number:	
E-mail Address:	
Role or responsibility in this project	<i>[add rows as needed]</i>

Project Schedule:

Proposed Project Start Date:	April 2022
Project End Date:	June 2023
Proposed Publication or Release Date:	
End of Date Retention Period:	

D. Frequency

Data in the CO APCD Warehouse is refreshed every other month and data products can be provided on a one-time basis or under a subscription model (e.g., quarterly, bi-annually or annually). Please select frequency below.

☒ One Time

OR

Subscription (Please select subscription model below)

- ☐ Quarterly
☐ Bi-annually
☐ Annually

E. Project Reporting

CIVHC highlights projects and data analysis on the public website: www.civhc.org/change-agents. This display of CO APCD projects provides future data requesters with ideas of how they can structure their analysis, and allows CIVHC's stakeholders to see how CO APCD data recipients are working to accomplish the Triple Aim for Colorado. Data recipients have the option of choosing whether to be identified or to not be identified.

- ☒ Yes, it is okay for CIVHC to identify my organization
☐ No, I do NOT wish for CIVHC to identify my organization

PART THREE

DATA MANAGEMENT PLAN (Not applicable for Custom Report Requests)

I. Organizational Capacity

As an Attachment, please provide copies of the Data Privacy and Security Policies and Procedures for the Requesting Organization as well as those of any third parties that will have access to the requested CO APCD data.

Ans: Abzooba information security and data privacy is governed by its IS Policy and supporting apex policies & procedures. Abzooba's information security is maintained through a risk based mechanism. Some of the policies & procedures:

- IS Policy
- Acceptable Use of Assets
- Procedure for Access Control
- Procedure for Information Handling

- Has the Requesting Organization or any member of the project team ever been involved with a project that experienced a data security incident? If so, describe the incident, the response procedures that were followed and any subsequent changes in procedures, processes or protocols to mitigate the risk of further events.

Ans: No reported incident of data security incident. Abzooba's has its incident management process to mitigate such scenario and updates the client if any incident occurs.

To the extent that the Data Privacy and Security Policies and Procedures, provided as an Attachment, do not already do so, please answer or attach answers for the following:

- **Physical Possession and Storage of CO APCD Data Files:**

- Describe how you will maintain an inventory of CO APCD data files and manage physical access to them for the duration of the project:

Ans: Project Manager shall hold the master list of data and shall manage the access to those files through matrix as an Administrative control.

- Describe your personnel/staffing safeguards, including:

- Confidentiality agreements in place with individuals identified as being assigned to this study. Include, for example, agreements between the Principal Investigator or Data Custodian and others, including research team members, and information technology and administrative staff:

Ans: NDA is signed by all Abzooba associates at the time of joining. Ad hoc non-disclosure agreement specific to the project shall be maintained if required.

- Staff training programs you have in place to ensure data protections and stewardship responsibilities are communicated to the research team:

Ans: Mandatory monthly IS trainings are conducted across all functions and projects with quarterly online evaluation.

- Procedures to track the active status and roles of each member of the research team throughout the project and a process for notifying the CO APCD of any changes to the team:
Ans: Shall be managed through the Access Control Policy on all entry/exit.
- Describe your technical and physical safeguards. Examples include:
 - Actions taken to physically secure data files, such as site and office access controls, secured file cabinets and locked offices.
Ans: Access to the Abzooba premises is managed through the access control devices and physical security guards post at gates.
Printout of the client data is only allowed with PM's permission and shall be under controls as governed by the Clear Desk & Clear Screen Policy.
 - Safeguards to limit access to CO APCD data and analytical extracts among the research team (Note: if the distribution of analytical data extracts among the researcher team is part of your data management plan, the extracts remain subject to the terms of your Data Use Agreement).
Ans: Client Data Protection & Preservation shall be in accordance to the set norms as specified by the client in the Contract/SOW
- Provide a brief description of your policies and procedures for ensuring that CO APCD data are protected when stored on a server.
 - Describe how your organization prevents the copying or transfer of data to local workstations and other hard media devices (CDs, DVDs, hard drives, etc.). Note that Applicants are required to encrypt CO APCD data both in motion and at rest:
Ans: Project related data is controlled through Access Control Policy. PM needs to raise IT tickets for requesting grant/revoke access on entry / exit of members from the project.
Data shall be accessed through secured tunnel (VPN) when at transit/rest.
Use of removeable media is prohibited strictly.
- Data Reporting and Publication
 - Your organization must ensure that all analytic extracts, analyses, findings, presentations, reports, and publications based on CO APCD data files adhere to specific requirements of the Data Use Agreement (DUA: refer to sections 6, 7 and 8 in the Data Use Agreement). **Briefly describe your plan for demonstrating that data reporting and publication processes will be consistent with the DUA, including adhering to CO APCD cell suppression policies:**
Ans: Data Reporting & Publication shall be in accordance to the set norms as specified by the client in the Contract/SOW

2. Completion of Research Tasks and Data Destruction

Your organization must ensure that it has policies and procedures in place to destroy the CO APCD data files upon completion of the project and that you have safeguards to ensure the data

are protected when researchers terminate their participation in the research project. Describe your plan for demonstrating that your organization has policies and procedures in place to reliably destroy the data files upon completion of the research:

Ans: Data destruction is governed by the Asset Disposal Policy in general. Adhoc norms are followed in accordance to the client requirements and set guidelines (i.e. NIST SP 800-88) in the Contract / SOW.

In case the data to be purged at the end of the project, log evidence shall be shared with the client post destruction of any such data.

3. Request for Privacy Board Approval *(Only Applicable to Identifiable Data Requests)*

Projects that request Identifiable information for a research purpose may require approval from the DRRC acting as a Privacy Board if an IRB is not available.

- The DRRC, acting as a Privacy Board, may approve a waiver of the individual authorization normally required to release PHI under CFR § 164.508 if:
- It would be impracticable for researchers to obtain written authorization from patients that are the subject of the research; and
- The research could not practicably be conducted without access to and use of the PHI.
- The DRRC, acting as a Privacy Board, is required to evaluate certain criteria in considering whether to approve an authorization waiver. If you are requesting Identifiable Information for a research purpose, explain why your proposed use of PHI involves no more than a minimal risk to the privacy of patients that are the subject of the research. Evidence of minimal risk to the privacy of patients that should be addressed in your explanation includes:
 - An adequate plan to protect PHI identifiers from improper use and disclosure;
 - An adequate plan to destroy PHI identifiers at the earliest opportunity; and
 - Adequate written assurances that PHI will not be reused or disclosed.

Appendix I

Certification of Project Completion and Destruction or Retention of Data

(Please Save)

Name:	
Title:	
Organization:	
Address:	
Tel Number:	
Fax Number:	
E-mail Address;	
Project Title:	
Data Sets:	
Years:	
<input type="checkbox"/> Certification of Data Destruction	Date the Data was Destroyed:
<input type="checkbox"/> Request to Retain Data	Date Until Data Will Be Retained:

Instructions: Data must be destroyed so that it cannot be recovered from electronic storage media in accordance with the methods established by the "Guidance to Render Unsecured Protected Health Information Unusable, Unreadable, or Indecipherable to Unauthorized Individuals," as established by the U.S. Department of Health and Human Services (HHS).

I hereby certify that the project described in the Application is complete as of this date
_____, ____, 20_.

Complete the appropriate section, below:

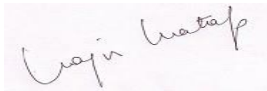
☐ I/we certify that we have destroyed all Data received from the CO APCD Administrator in connection with this project, in all media that were used during the research project. This includes, but is not limited to data maintained on hard drive(s), diskettes, CDs, etc.

☐ I/we certify that we are retaining the data received in connection with the aforementioned project, pursuant to the following health or research justification (provide detail, use as much additional space as necessary and state how long the data will be retained).

☐ I/we hereby certify that we are retaining the Data received from the APCD Administrator in connection with the aforementioned project, as required by the following law. [Reference the appropriate law and indicate the timeframe].

By signing this Agreement, the Receiving Organization agrees to abide by all provisions set out in this Agreement.

SIGNATURES:

For the CO APCD:	For Receiving Organization:
Signature:	Signature: 
Name: Pete Sheehan	Name: Rajiv Pratap
Title: VP of Client Solutions & State Initiatives	Title: Chief Business Officer