



Application for

Requesting Health Care Claims Research Data Sets

Office of Health Strategy All Payer Claims Database (“APCD”) requires data requestors to complete this application to request access to APCD data. This application is only for de-identified data sets, which conform to the HIPAA Privacy Rule 45 CFR 164.514 (a)-(b) with members de-identified to protect privacy.

Please note that some parts of your completed application will be publicly posted on the APCD’s website. Research Methodology and Data Security details will not be posted publicly.

Please complete the application form below to request access to the APCD data. The APCD Data Review Committee (DRC) will evaluate all requests. Please submit your data request application, additional documents and/or spreadsheets and any questions to:

Attn: Data Request Application, APCD

OHS.APCD@ct.gov

1. GENERAL INFORMATION

Applicant Information	Details
Principal Investigator’s Name and Title:	Ambarish J. Ambegaonkar, Ph.D. Founder and CEO
Organization Name:	APPERTURE LLC
Street Address, City/Town, State, Zip Code:	9 Molly Pitcher Road, Marlboro, NJ 07746
E-mail:	ambi@apperturehealth.com
Phone Number:	Ambi: (732) 513-5736
Date of Application (MM/DD/YYYY):	10/25/2021
Project / Research Title:	Medication adherence in the state of CT in persons diagnosed with three chronic disease conditions: asthma, diabetes, and cancer versus those on other therapies
Project / Research Objective(s) (100 words or less):	This protocol describes a retrospective analysis to examine medication non-adherence in the state of CT across three chronic diseases: asthma, diabetes, and cancer when compared to a



	matched cohort of individuals with other disease states. The final goal is to develop a prediction algorithm to identify patients at risk of being non-adherent.
Project / Research Question(s) to be addressed via proposed research (if applicable, briefly)	<ol style="list-style-type: none"> 1. Compute MPR, PDC180, PDC360 and persistence for all eligible patients in the claims data 2. Determine whether medication adherence is affected by patient demographic, drug, cost, and other factors. Assess key factors associated with non-adherence <p>Click or tap here to enter text.</p>
Contact Name:	Ambarish Ambegaonkar
Contact Phone Number:	(732) 513-5736
Contact E-Mail:	ambi@apperturehealth.com
Others Accessing Data:	<ol style="list-style-type: none"> 1. Ambarish Ambegaonkar, Ph.D. 2. Gauri Desai MS 3. Pushyami Gunisetty MS 4. Mariia Salova MD MS

2. PROJECT SUMMARY

Briefly describe the purpose of this project and how the requested data from Connecticut’s APCD will accomplish your purpose.

<p>Brief overview of research project (in 200 words or less):</p> <p>The purpose of this research project is to access anonymized patient data from 2012 to present using the CT OHS APCD dataset to examine medication adherence across three chronic conditions: asthma, cancer, and diabetes. Medication adherence and persistence will be calculated for each patient population and study cohorts, if possible, will be stratified by adherent (MPR\geq80%) vs. non-adherent (MPR$<$80%). Apperture intends to conduct a descriptive analysis of the patient populations and report variations in cost by patient demographics. If the data is sufficiently robust, the intent is to develop a prediction algorithm to identify key variables associated with patient adherence vs. non-adherence. This would eventually allow for the identification of barriers to adherence in non-adherent patients, and the development or implementation of interventions to improve medication adherence and patient outcomes. The CT State Department of Health (CT DOH) lists asthma, cancer (breast, colorectal, ovarian), and diabetes as among the top chronic disease programs on its website (https://portal.ct.gov/DPH/Health-Education-Management--Surveillance/Chronic-Disease-Prevention-and-Health-Promotion/Chronic-Disease-Prevention-and-Health-Promotion) demonstrating the critical nature of researching these patient populations. Accessing the CT APCD will collaboratively and synergistically accomplish APPERTURE’s and CT’s ultimate goal of improving the health outcomes of patients with chronic conditions.</p>



3. RESEARCH PROTOCOL

Please fill-in the following information.

A. Summary of background, purposes and origin of the research (in 200 words or less):

Three of the CT DOH chronic disease programs include asthma, cancer, and diabetes. In 2018, 62,400 (9.7%) children and 290,300 (10.3%) adults suffered from asthma. In 2018, Connecticut incurred \$102 million acute care charges due to asthma as a primary diagnosis; \$56 million for hospitalizations and \$46 million for emergency department visits.

An estimated 8.9% of the CT adult population or ~250,000 adults age ≥ 18 years have been diagnosed with diabetes (2012-2014 data). According to the ADA, diabetes cost Connecticut ~\$2.92 billion in direct and indirect costs in 2012. In 2014, approximately \$197.8 million was billed for hospitalizations due to diabetes as a principal diagnosis.

Cancer is the second leading cause of death in CT and the nation. Breast, prostate, lung, and colorectal are the four most common cancers diagnosed, while breast, lung, colorectal, and pancreatic cancers account for the majority of deaths attributed to cancer in CT.

Adherence to medications used to treat these chronic conditions is critical to improving and optimizing patient outcomes given many if not most require lifetime treatment regimens. This research proposal is fully aligned with the goals of the state of CT – to streamline costs and improve the quality of life of patients.



B. How does the research address health-related questions, particularly in the context of improving health and health equity? (in 100 words or less):

It is well documented in the literature that adherence to medications for chronic health conditions is linked to patient outcomes. Improved adherence leads to improved patient outcomes. Barriers to adherence can be patient-, provider-, treatment-, or condition-related; however, they may also be outside the patient's ability to modify i.e., socioeconomic and healthcare system related. Ensuring that all patients diagnosed and prescribed critical therapies to treat their chronic conditions is imperative, and starts first with assessing whether an adherence issue exists and to what extent it exists within a pre-specified patient population.

C. Please describe research design and methodology (in 200 words or less):

Descriptive analysis: All study variables will be analyzed descriptively. Numbers and percentages will be provided for dichotomous/polychotomous variables. A standard set of statistics (means, standard deviations, medians, minima, maxima, Q1 and Q3) will be provided for continuous variables. 95% confidence intervals will be provided for continuous and binary variables.

Adherence Metrics will be calculated using the Medication Possession Ratio (MPR) and Proportion of Days Covered (PDC) and will include assessment of Gap Days, persistence, and adherence (MPR \geq 80% considered adherent).

Medication adherence: Describe trends in adherence with suitable comparator variables from matched patients. Propensity matching by key characteristics such as age, gender or number of medications.

Predictive analytics: Depending on the extent of data, we intend to develop an algorithm to predict the likelihood of a patient being non-adherent or adherent to therapy:
---Use regression to identify key factors that impact adherence scores

D. Expected begin and end dates of the research:

Post Data receipt though to 31st December 2022 (estimated)
Data expected from Inception to the latest quarter for Eligibility and Pharmacy Claims.

E. Organizational qualifications: Briefly describe your organization's experience with projects of similar scale and scope:



Ambarish Ambegaokar, PhD. As the Principal Investigator has decades of experience conducting retrospective analyses of claims data across Medicaid, Optum and Truven Datasets particularly in developing Adherence analytics and metrics.

Mariia Salova MD MS is the Medical Lead overseeing the clinical overview of the project and developing the hypothesis, ensuring medically appropriate oversight on project analysis and results.

Gauri Desai, MS is an HEOR scientist at APPERTURE and will be primarily responsible for the analysis ...Gauri has 2 years of experience conducting retrospective analysis of EMR data, and MEPS data using analytic softwares such as SAS, SPSS and SQL. Gauri has a SAS certified specialist base programmer certification.

Pushyami Gunisetty is the Data Custodian and Analyst and is an experienced healthcare data analyst with proficiency in data visualization (Tableau) and machine learning (R, Python, MS Excel), has a over 2 years of experience in data analytics. She has worked on various healthcare datasets including HCUP's 2016, 2017, clinicaltrials.gov, NIS database, to study healthcare trends in costs and utilization.

F. Funding Source:

What is the funding source of this project?

APPERTURE LLC

What is the duration of this funding?

One-time purchase: project duration will be approximately 12-13 months from date of receipt of data.

Do you intend to charge a fee for your reports or the results of your analyses?

No

If yes, to whom?

N/A



G. Prior Review:

You are required to allow APCD's administrator to review your report or output (spreadsheet, data table, etc.) prior to any publication to ensure that the report is in compliance with the requirements for attributes, including cell suppression rules, risk of inferential reidentification, and consistency to methodology of the project. Please describe how you intend to comply with this requirement.

APPERTURE intends to share drafts of any APCD-related publication (abstract, poster, manuscript: including relevant figures/tables) for OHS review & approval prior to submission to a scientific congress or peer-reviewed journal.

On what date do you expect to release/publish this report?

Draft components, as listed above, for any congress or peer-reviewed journal submission will be available for review 4 weeks (or agreed-upon date with APCD's administrator) prior to the submission deadline.

By what date do you intend to file it with APCD's administrator? (at least 4-week review period needed)

A specific date is not yet set. Apperture will comply with the necessary review period of at least 4 weeks to allow for review, comment, and approval of any publication materials.

4. Data Selection(s)

A. Data sets – each type of data set will have one standard format unless the requestor wants to customize it further (at additional cost.) The data sets are -

- i. Eligibility
- ii. Medical Claims
- iii. Pharmacy Claims
- iv. Inpatient Discharge Data
- v. ED Data
- vi. Outpatient Facility Data
- vii. Professional Data

B. Filters



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Applicants can request filters on the data for limited extraction, if necessary for their research project. A list of common filters is given below.



Common Filters	Data Set	Requested Filter
Eligibility Dates	Elig	No filters requested – requesting full dataset
Zip Codes	Elig	No filters requested – requesting full dataset
Members' Age	Elig	No filters requested – requesting full dataset
Service Dates	Med	Not requesting Data
Diagnoses	Med	Not requesting data
Procedures	Med	Not requesting data
Inpatient Admissions	Med	Not requesting data
Medications (NDCs)	Pharm	No filters requested – requesting full dataset
Add rows for others		Click or tap here to enter text.

C. Aggregated Data

Applicants can request that data is aggregated into summary tables. Doing so will provide an applicant with total counts, average, standard deviation, rates, and other meaningful statistical measures. Applicants will have to provide information on the following tables.

Data Set or Field Names	Count, Sum, Average, Dev, Range, Rate	Description of Summary	Group By Variable(s)
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.



Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Not applicable – requesting full dataset	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.



5. DATA SECURITY AND INTEGRITY

(Information from this section will not be posted on the APCD's public website.)

1. Where will be the data be located physically? (Provide the delivery address for the data including building and floor.)

Data will be stored on a Microsoft Azure server One Drive. We can FTP download directly to the dedicated and private One Drive. Access to the drive is controlled by the Principal Investigator (Ambarish Ambegoankar) and Analytics Data Custodian and Consultant (Pushyami Gunisetty) assigned privileges.

2. Please provide name and information of the organization that will host and manage APCD data, including the name of the custodian.

Data will be hosted on Microsoft Azure servers, however it will be managed by APPERTURE. Pushyami G will be the data custodian and an employee of APPERTURE.

3. Describe how you will maintain an inventory of APCD data, derived analytic files and scratch files, and how you will manage physical access to such data during the duration of the project. (Please describe and attach documents supporting your policies and procedures.)

The raw data will be stored on Microsoft Azure. A working copy of the data will be created and used for all analyses. All derived files, analytic files and other files will be stored on the dedicated Onedrive folder.

Physical access of the data will be limited to the research team and Populated Results Tables can be downloaed from the server through a secure VPN.

4. Do you have confidentiality agreements with the principal investigator, the data custodian or other research individuals or technical (IT) team members, particularly those with access to the APCD data? (Please describe and attach documents supporting your policies and procedures.)

Yes through an Employee agreement as PI and Data custodian and Research & IT individuals are all employees of APPERTURE LLC.



5. Technical Safeguards:

- a) Describe the steps do you have to physically secure data, such as site or office access controls, secured file cabinets, and locked offices?

The data will be stored on a Microsoft Azure server, which is very secure and HIPAA compliant.

- b) What safeguards are in place to restrict data access among the research team? Describe your password-protected access system?

Each user has a unique user ID and password to access the data by logging into Microsoft Azure. A log of users accessing the data and related files will be maintained.

- c) Describe your policies and procedures for ensuring APCD data is protected while stored on server(s). Describe how your organization ensures that APCD data on servers cannot be copied to local workstations, laptops, smartphones, and other media (CDs, DVDs, hard drives, thumb drives, etc.).

Microsoft Azure, which we will be using to store and analyze data, has access controls in place including a safety feature that protects the APCD data and prevents users from downloading the data to local devices.

- d) Provide your organization's written information security program (WISP) or its policies & procedures regarding security provisions, particularly security or privacy safeguards against unauthorized access to or use of health data.

Apperture's Data Security Policy outlines access control, network access, user responsibilities, technical guidelines, reporting requirements and enforcement for access to confidential and sensitive data. In the event that a data breach should ever occur, Apperture's Data Breach Policy will ensure a clearly defined breach response process. Unique user IDs and passwords will be used and access logs maintained to safeguard against unauthorized access to the data.



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6. SIGNATURES

By signing this application, you certify that the information enclosed herein is true and correct and if this Application is approved you agree to the terms and conditions of the Data Use Agreement (DUA) for the use of the APCD Data.

For the Applicant:
Signature:

Name: Ambarish Ambegaonkar, Ph.D.
Title: Founder and CEO
Date: 10/25/2021
Organization: APPERTURE LLC



APPENDIX 1: SPECIFICATIONS FOR DATA RELEASE APPLICATION

General Information & Instructions

1. The APCD may deliver data via the following options:
 - a. **Secured File Transfer: An approved applicant will be allowed to access data at approved levels for an established time period.**
 - b. Disk drives: An approved applicant will be allowed to access data encrypted on a device – DVD drives, CD drives or Disk / USB Flash drive.
2. For data filters, use Table 4(B) to select filters from Eligibility, Medical, and Pharmacy claims.
3. For summary data, applicant will have to specify on Table 4(C) in the application and/or work closely with APCD's staff to ensure accuracy of the methodology.
4. Associated fees must be received prior to issuing access credentials to the Applicant. See data access fee schedule for information about access fees.
5. An APCD data dictionary is available on the APCD website (<https://healthscorect.com/researcher#dictionary>).



APPENDIX 2: Certification of Project Completion, Destruction, or Retention of Data

Name:	
Title:	
Organization:	
Address:	
Telephone:	
E-mail:	
Project Title:	
Data Sets:	
Years:	
<input type="checkbox"/> Certification of data Destruction – date when data destroyed:	
<input type="checkbox"/> Request to Retain Data	Date until data will be retained:

I hereby certify that the project described in the applications is complete as of ___/___/20___. Please select one or more of the following options:

I/We certify that we have destroyed all data received from the APCD in connection with this project in any media, form, or format. This includes, but is not limited to: data maintained on hard or USB flash drive(s), DVDs/CDs, or any other printed materials.

I/We certify that we have retained all data received from the APCD’s administrator in connection with this project, pursuant to the following health or research justification (provide detail on why it is necessary to retain data and for how long:

I/We certify that we have retained all Data received from APCD’s administrator in connection with this project, as required by the data use agreement.

SIGNATURE:

For the Receiving Organization: _____

Date: _