center for health information and analysis

Application for Massachusetts All-Payer Claims Data (Non-Government)
[Exhibit A – Data Application]

I. INSTRUCTIONS

This form is required for all Applicants, Agencies, or Organizations, hereinafter referred to as "Organization", except Government Agencies as defined in 957 CMR 5.02, requesting protected health information. *All Organizations must also complete the Data Management Plan, and attach it to this Application. The Application and the Data Management Plan must be signed by an authorized signatory. This Application and the Data Management Plan will be used by CHIA to determine whether the request meets the criteria for data release, pursuant to 957 CMR 5.00. Please complete the Application documents fully and accurately. Prior to receiving CHIA Data, the Organization must execute CHIA's Data Use Agreement. Organiations may wish to review that document prior to submitting this Application.*

Before completing this Application, please review the data request information on CHIA's website:

- Data Availability
- Fee Schedule
- Data Request Process

After reviewing the information on the website and this Application, please contact CHIA at apcd.data@state.ma.us if you have additional questions about how to complete this form.

The Appliciaton and all attachments must be uploaded to IRBNet. All Application documents can be found on the CHIA website.

Information submitted as part of the Application may be subject to verification during the review process or during any audit review conducted at CHIA's discretion.

Applications will not be reviewed until the Application and all supporting documents are complete and the required application fee is received.

A Fee Remittance Form with instructions for submitting the application fee is available on the CHIA website. If you are requesting a fee waiver, a copy of the Fee Remittance Form and any supporting documentation must be uploaded to IRBNet. Please be aware that if your research is funded and under that funding you are required to release raw data to the funding source, you may not receive CHIA Data.

II. FEE INFORMATION

1. Consult the most current Fee Schedule for All-Payer Claims Database data.

2. After reviewing the Fee Schedule, if you have any questions about the application or data fees, contact apcd.data@state.ma.us.

3. If you believe that you qualify for a fee waiver, complete and submit the Fee Remittance Form and attach it and all required supporting documentation with your application. Refer to the Fee Schedule (effective Feb 1, 2017) for fee waiver criteria.

4. Applications will not be reviewed until the application fee is received.

5. Data for approved Applications will not be released until the payment for the Data is received.

III. ORGANIZATION & INVESTIGATOR INFORMATION

Project Title:	Prescriber History and the Effectiveness of Continuing Medical Education
IRBNet Number:	Click here to enter text.
Organization Requesting Data (Recipient):	Trustees of Boston University
Organization Website:	**https://www.bu.edu/econ/**
Authorized Signatory for Organization:	**William Segarra, JD, MPH**
Title:	Director, Industry Contracts and Agreements
E-Mail Address:	segarra@bu.edu
Telephone Number:	617-353-4365
Address, City/Town, State, Zip Code:	25 Buick Street, Suite 200, Boston, MA 02467
Data Custodian: **(individual responsible for organizing, storing, and archiving Data)**	Marshall Drake
Title:	PhD Candidate
E-Mail Address:	mhdrake@bu.edu
Telephone Number:	210-508-7756
Address, City/Town, State, Zip Code:	270 Bay State Rd. Boston, MA 02215
Primary Investigator (Applicant): **(individual responsible for the research team using the Data)**	Raymond Fisman, PhD
Title:	Slater Family Chair in Behavioral Economics
E-Mail Address:	rfisman@bu.edu
Telephone Number:	210-508-7756
Address, City/Town, State, Zip Code:	270 Bay State Rd. Boston, MA 02215
Names of Co-Investigators:	Alexander Hoagland, PhD; Marshall Drake
E-Mail Addresses of Co-Investigators:	alcobe@bu.edu, mhdrake@bu.edu

IV. PROJECT INFORMATION

IMPORTANT NOTE: Organization represents that the statements made below as well as in any study or research protocol or project plan, or other documents submitted to CHIA in support of the Data Application are complete and accurate and represent the total use of the CHIA Data requested. Any and all CHIA Data released to the Organization under an approved application may ONLY be used for the express purposes identified in this section by the Organization, and for no other purposes. Use of CHIA Data for other purposes requires a separate Data Application to CHIA written request to CHIA, with approval being subject to CHIA's regulatory restrictions and approval process. Unauthorized use is a material violation of your institution's Data Use Agreement with CHIA.

1. What will be the use of the CHIA Data requested? [Check all that apply]

☐ Epidemiological	☐ Health planning/resource allocation	☐Cost trends
☒ Longitudinal Research	☐ Quality of care assessment	☐ Rate setting
☐ Reference tool	☒ Research studies	☐ Severity index tool (or other derived input)
☐ Surveillance	☒ Student research	☐ Utilization review of resources
☐ Inclusion in a product	☐ Other (describe in box below)	

Click here to enter text.

2. Provide an abstract or brief summary of the specific purpose and objectives of your Project. This description should include the research questions and/or hypotheses the project will attempt to address, or describe the intended product or report that will be derived from the requested data and how this product will be used. Include a brief summary of the pertinent literature with citations, if applicable.

For continuing medical education (CME) to effectively change behavior, medical professionals must both be exposed to new medical information and update their beliefs about what practices are effective. Determining the effectiveness of CME programs thus requires an understanding of which medical professionals choose to take CME courses, how these courses affect beliefs, and whether new beliefs lead to real changes in prescribing behavior.

We hope to study learning by physicians and other medical professionals within the context of the opioid epidemic. Opioids are now known to be widely addictive, and their abuse creates a heavy public health burden. Heavy marketing and promotion of drugs like OxyContin in the 1990s led to high levels of prescriptions and increasing levels of abuse (Van Zee, 2009), and the consequences are still evident today; in 2020 alone, opioids and other narcotics were responsible for approximately 70,000 deaths in the US (CDC, 2021). Despite increased awareness of these consequences, opioids continue to be widely prescribed (Champagne-Langabeer et al., 2021). In particular, there is wide variation in the prescribing patterns of different physicians, with 1% of providers providing 49% of all opioid doses and 27% of all opioid prescriptions (Kiang et al., 2020).

Extensive research in economics and psychology shows that individuals process information in a motivated manner (Kunda, 1990). In general, people treat information that aligns with previously held beliefs more favorably. Moreover, people will avoid information that is harmful to their self-image (Dana et al., 2007, Eil and Rao, 2010) and update beliefs more in response to positive signals over negative signals (Mobius et al., 2022). A growing literature on information aversion seeks to understand how people seek out and interpret information.

There are a variety of reasons why individuals with a history of prescribing high levels of opioids may be less receptive to CME on safer opioid prescribing. They may hold different prior beliefs about the dangers of opioid use, have financial incentives to prescribe at high levels, or remain ignorant about errors in past behavior to maintain a positive self-image. Our project will disentangle these effects in order to better understand how people learn about and adopt new medical practices. This research will inform future education campaigns in the presence of motivated reasoning.

Aim 1: Provide a causal estimate of the impact of CME on the volume and type of opioid prescriptions providers utilize.
This project will evaluate the extent to which providers select into and respond to SCOPE, a CME program provided by Boston University that educates physicians on how to safely and competently prescribe opioids. This program has been shown to effectively change attitudes and knowledge about opioid prescribing behavior (Alford et al. 2016). We will link provider attendance to observed prescribing data in the Massachusetts All-Payer Claims Database (APCD). This link will allow direct estimation of the impact of CME on real prescribing behavior. In conjunction with this analysis, we propose investigating potential heterogeneity in this effect to determine whether CME is more or less effective for certain types of physicians. Relative to the general population of physicians, are individuals that already prescribe fewer opioids more likely to take up CME? Conditional on attending SCOPE, is CME less effective at changing prescribing patterns for those who previously prescribed opioids at high volumes?

Aim 2: Link the effects of CME on belief formation with effects on prescriptions.

To achieve this aim, we will leverage SCOPE's data on changes in factual beliefs related to proper opioid prescribing before and after the program. This data would allow us to observe actual changes in knowledge before and after the program. In this section of the project, we would answer questions such as: do individuals that say they will prescribe at lower levels actually do so? What is the interaction of provider type and belief adjustment, and to what extent are changes in reported beliefs informative of changes in provider practice? How long do the effects of CME on beliefs last?

References

1. Alford, Zisblatt, L., Ng, P., Hayes, S. M., Peloquin, S., Hardesty, I., & White, J. L. (2016). SCOPE of Pain: An Evaluation of an Opioid Risk Evaluation and Mitigation Strategy Continuing Education Program. Pain Medicine (Malden, Mass.), 17(1), 52–63. https://doi.org/10.1111/pme.12878

2. CDC, NCHS. Multiple Cause of Death 1999-2020 on CDC WONDER Online Database, released in 2021. Data are from the Multiple Cause of Death Files, 1999-2020, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/mcd-icd10.html on Feb 23, 2022 8:43:05 AM
3. Champagne-Langabeer T, Madu R, Giri S, Stotts AL, Langabeer JR. Opioid prescribing patterns and overdose deaths in Texas. Subst Abus. 2021;42(2):161-167. doi: 10.1080/08897077.2019.1675114. Epub 2019 Oct 23. PMID: 31644388.
4. Dana, Weber, R. A., & Kuang, J. X. (2007). Exploiting moral wiggle room: experiments demonstrating an illusory preference for fairness. Economic Theory, 33(1), 67–80. https://doi.org/10.1007/s00199-006-0153-z
5. Eil, & Rao, J. M. (2011). The Good News-Bad News Effect: Asymmetric Processing of Objective Information about Yourself. American Economic Journal. Microeconomics, 3(2), 114–138. https://doi.org/10.1257/mic.3.2.114
6. Kiang, Humphreys, K., Cullen, M. R., & Basu, S. (2020). Opioid prescribing patterns among medical providers in the United States, 2003-17: retrospective, observational study. BMJ, 368, l6968–l6968. https://doi.org/10.1136/bmj.l6968
7. Kunda, Z. (1990). The case for motivated reasoning. Psychological Bulletin, 108(3), 480–498. https://doi.org/10.1037/0033-2909.108.3.480
8. Mobius, M., Niederle, M., Niehaus, P., & Rosenblat, T. (2022). Managing Self-Confidence: Theory and Experimental Evidence. Management Science.
9. Van Zee. (2009). The Promotion and Marketing of OxyContin: Commercial Triumph, Public Health Tragedy. American Journal of Public Health (1971), 99(2), 221–227. https://doi.org/10.2105/AJPH.2007.131714

3. Has an Institutional Review Board (IRB) reviewed your Project?

☐ Yes [*If yes, a copy of the approval letter and protocol must be included with the Application package on IRBNet.*]
☐ No, this Project is not human subject research and does not require IRB review.

4. **Research Methodology**: Applications must include either the IRB protocol or a written description of the Project methodology (typically 1-2 pages), which should state the Project objectives and/or identify relevant research questions. This document must be included with the Application package on IRBNet and must provide sufficient detail to allow CHIA to understand how the Data will be used to meet objectives or address research questions.

V. PUBLIC INTEREST

1. Briefly explain why completing this Project is in the public interest. Use quantitative indicators of public health importance where possible, for example, numbers of deaths or incident cases; age-adjusted, age-specific, or crude rates; or years of potential life lost. *Uses that serve the public interest under CHIA regulations include, but are not limited to: health cost and utilization analysis to formulate public policy; studies that promote improvement in population health, health care quality or access; and health planning tied to evaluation or improvement of Massachusetts state government initiatives.*

The misuse and abuse of opioids have created a devastating public health burden. Over 500,000 people have died from overdoses since 1999, and opioids and other narcotics were responsible for approximately 70,000 deaths in the US in 2020 alone, and (CDC, 2021). To combat the opioid epidmenic, many state governments, including Massachusetts, require licensed providers to attain regular continuing medical education in opioids and pain management.

Our project will contribute to public interest in two major ways. First, we will evaluate programs that are directly related to existing public policy. In particular, Massachusetts requires 3 hours of opioid and pain management CME each renewal cycle. Our project will evaluate the effectiveness of a particular CME program at changing prescribing behavior of real physicians in Massachusetts. Alford et al. (2016) showed that this program effectively changed beliefs and attitudes towards proper pain management. Our program will extend this research to examine how the program changed tangible provider behavior. Second, our project will break down mechanisms by which CME may be more or less effective. Future public policy and CME organizers can use this information to create more effective CME programs and requirements. Moreover, this project will provide direct insights for CME related to pain management, which has the scope for large-scale improvements to public health.

References

1. Alford, Zisblatt, L., Ng, P., Hayes, S. M., Peloquin, S., Hardesty, I., & White, J. L. (2016). SCOPE of Pain: An Evaluation of an Opioid Risk Evaluation and Mitigation Strategy Continuing Education Program. Pain Medicine (Malden, Mass.), 17(1), 52–63. https://doi.org/10.1111/pme.12878

2. CDC, NCHS. Multiple Cause of Death 1999-2020 on CDC WONDER Online Database, released in 2021. Data are from the Multiple Cause of Death Files, 1999-2020, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/mcd-icd10.html on Feb 23, 2022 8:43:05 AM

VI. DATASETS REQUESTED

The Massachusetts All-Payer Claims Database is comprised of medical, pharmacy, and dental claims and information from the member eligibility, provider, and product files that are collected from health insurance payers licensed to operate in the Commonwealth of Massachusetts. This information encompasses public and private payers as well as data from insured and self-insured plans. APCD data are refreshed and updated annually and made available to approved data users in Release Versions that contain five calendar years of data and three months of run-out. For more information about APCD Release Versions, including available years of data and a full list of elements in the release please refer to release layouts, data dictionaries and similar documentation included on CHIA's website.

Data requests are typically fulfilled on a one time basis, however; certain Projects may require future years of data that will become available in a subsequent release. Projects that anticipate a need for future years of data may request to be considered for a subscription. Approved subscriptions will receive, upon request, the same data files and data elements included in the initial Release annually or as available. Please note that approved subscription requests are subject to the Data Use Agreement, will require payment of fees for additional Data for Non-Government Entities, and subject to the limitation that the Data can be used only in support of the approved Project.

1. Please indicate below whether this is a one-time request, or if the described Project will require a subscription.

   ☒ One-Time Request **OR** ☐ Subscription

2. Select Release Version and years of data requested (Release Versions and years not listed are not available).

☒ **Release Version 8.0**	☒ **Release Version 10.0**
☒ 2014	☒ 2016
☒ 2015	☒ 2017
☐ 2016	☒ 2018
☐ 2017	☒ 2019
☐ 2018	☒ 2020

3. Specify below the data files requested for this Project, and provide your justification for requesting *each* file.

☒ Medical Claims

Describe how your research objectives require Medical Claims data:

We require medical claims to complete the following:

1. Identify our study cohort of patients requiring opioid presciptions, including the principal diagnosis and timing/frequency of visits associated with opioid dispensing.
2. Assign outcome variables of interest, including appropriateness measures of prescribing (based on diagnoses listed and procedures performed at the visit level)

3. Define covariates in our models such as patient risk and comorbidities, as well as markers of healthcare utilization (e.g., counts of outpatient visits and hospitalizations, time since diagnosis, etc.)

☒ Pharmacy Claims

Describe how your research objectives require Pharmacy Claims data:

We require pharmacy claims to complete the following:

1. Identify our main study cohort of patients receiving opioid prescriptions, including the type, volume, and brand/chemical compound of opioid prescribed
2. Assign outcome variables of interest, including the morphine milligram equivalents received by each individual in our sample and the overall rate of opioid prescribing at the provider level.
3. Define other covariates of interest, including brand fixed effects (capturing advertising effects) and polypharmacy approaches to opioid dispensing.

☐ Dental Claims

Describe how your research objectives require Dental Claims data:

Click here to enter text.

☒ Member Eligibility

Describe how your research objectives require Member Eligibility data:

We require member eligibility data to define covariates in our model including member demographics and type of health plan. These variables are potential confounders of the likelihood of opioid use regardless of provider training.

☒ Provider

Describe how your research objectives require Provider data:

We require provider data to link prescribing behaviors to provider CME training, as well as to link patients receiving opioid prescriptions from the same medical professional/facility. We will also define additional covariates such as provider specialty, professional tenure (in years), organizational affiliation, and practice volume.

☐ Product

Describe how your research objectives require Product data:

Click here to enter text.

VII. DATA ENHANCEMENTS REQUESTED

State and federal privacy laws limit the release and use of CHIA Data to the minimum amount of data needed to accomplish a specific Project objective.

All-Payer Claims Database data is released in Limited Data Sets (LDS). All Organizations receive the "Core" LDS, but may also request the data enhancements listed below for inclusion in their analyses. Requests for enhancements will be reviewed by CHIA to determine whether each represents the minimum data necessary to complete the specific Project objective.

For a full list of elements in the release (i.e., the core elements and additional elements), please refer to release layouts, data dictionaries and similar documentation included on CHIA's website.

1. Specify below which enhancements you are requesting in addition to the "Core" LDS, provide your justification for requesting each enhancement.

a. Geographic Subdivisions

The geographic subdivisions listed below are available for Massachusetts residents and providers only. Select *one* of the following options.

☒ 3-Digit Zip Codes (standard)	☐ 5-Digit Zip Codes***
***If requested, provide justification for requesting 5-Digit Zip Code. Refer to specifics in your methodology: Click here to enter text.	

b. Date Resolution

Select *one* option from the following options.

☐ Year (YYYY) (Standard)	☒ Month (YYYYMM) ***	☐ Day (YYYYMMDD) *** [for selected data elements only]
*** If requested, provide justification for requesting Month or Day. Refer to specifics in your methodology: We require data at the montly level to more precisely estimate the impacts of professional training on prescribing in the short-run. Dates of services at the month level will allow us to estimate event study (two-way fixed-effects) regressions identifying the dynamic treatment effects of training across the months immediately preceding and following training.		

c. National Provider Identifier (NPI)

Select *one* of the following options.

☐ Encrypted National Provider Identifiers (standard)	☒ Decrypted National Provider Identifiers***
*** If requested, provide justification for requesting decrypted National Provider Identifier(s). Refer to specifics in your methodology: We require unencrypted NPI numbers in order to link APCD data to external data for attending professional SCOPE trainings. These variables are critical to estimate the effect of physician-level trainings on prescribing outcomes at the provider and organizational level.	

VIII. MEDICAID (MASSHEALTH) DATA

1. Please indicate whether you are seeking Medicaid Data:

☒ Yes
☐ No

2. Federal law (42 USC 1396a(a)7) restricts the use of individually identifiable data of Medicaid recipients to uses that are ***directly connected to the administration of the Medicaid program***. If you are requesting MassHealth Data, please describe, in the space below, why your use of the Data meets this requirement. *Your description should focus on how the results of your project could be used by the Executive Office of Health and Human Services in connection with the administering the MassHealth program*. Requests for MassHealth Data

will be forwarded to MassHealth for a determination as to whether the proposed use of the Data is directly connected to the administration of the MassHealth program. CHIA cannot release MassHealth Data without approval from MassHealth. This may introduce significant delays in the receipt of MassHealth Data.

This study is directly connected to the administration of the MassHealth program as a goal of this research is to improve the quality of opioid prescribing and coordination for Massachusetts residents, including MassHealth enrollees. A critical goal of MassHealth's Drug Utilization Review (DUR) program is to "ensure that prescribed drugs are appropriate, medically necessary, and not likely to result in medication-related problems."[1] Prior work has shown that Medicaid beneficiaries have higher rates of opioid addiction than other insured groups,[2] and results in higher costs for publicly-funded programs, including MassHealth.[3] As all licensed physicians must be enrolled as providers (either billing or nonbilling) in MassHealth as of 2017,[4] and the state of Massachusetts requires CME regarding opioid prescribing as of 2015,[5] understanding the effects of professional training on the quality of opioid prescribing is critical to the safety and wellbeing of MassHealth enrollees as well as Massachusetts residents more generally. This project aims to identify gaps in the effective targeting of professional training on prescribing behavior and thereby improve the quality of remaining opioid prescribing. Findings from this work can be used by the Executive Office of Health and Human Services to improve CME and regulations regarding opioid use for MassHealth enrollees and thereby improve the quality of care for these individuals.

References:

1. https://www.mass.gov/masshealth-drug-utilization-review-dur.
2. William BC, Fiellin DA, Merrill JO, Schulman B, Finkelstein R, Olsen Y, et al. Opioid use disorder in the United States: insurance status and treatment access. Drug Alcohol Depend. 2008;94(1–3):207–13.
3. McAdam-Marx, C., Roland, C. L., Cleveland, J., & Oderda, G. M. (2010). Costs of opioid abuse and misuse determined from a Medicaid database. Journal of pain & palliative care pharmacotherapy, 24(1), 5-18.
4. https://www.massmed.org/Templates/Article.aspx?id=4294980905.
5. https://www.massmed.org/Continuing-Education-and-Events/Online-CME/Courses/New-Opioid-Prescribing-Guidelines/New-Opioid-Prescribing-Guidelines-in-Practice/.

3. Organizations approved to receive Medicaid Data will be required to execute a Medicaid Aknowlegment of Conditions MassHealth may impose additional requirements on applicants for Medicaid Data as necessary to ensure compliance with federal laws and regulations regarding Medicaid.

IX. DATA LINKAGE

Data linkage involves combining CHIA Data with other data to create a more extensive database for analysis. Data linkage is typically used to link multiple events or characteristics within one database that refer to a single person within CHIA Data.

1. Do you intend to link or merge CHIA Data to other data?

☒ Yes

☐ No linkage or merger with any other data will occur

2. If yes, please indicate below the types of data to which CHIA Data will be linked. [Check all that apply]

- ☐ Individual Patient Level Data (e.g. disease registries, death data)
- ☒ Individual Provider Level Data (e.g., American Medical Association Physician Masterfile)
- ☐ Individual Facility Level Data (e.g., American Hospital Association data)
- ☒ Aggregate Data (e.g., Census data)
- ☐ Other (please describe):

3. If yes, describe the dataset(s) to which the CHIA Data will be linked, indicate which CHIA Data elements will be linked and the purpose for each linkage.

We plan to link CHIA data to the following datasets:

1. Provider Level Data: We will link provider level data using the National Provider Identification (NPI) number to private data on CME (SCOPE of pain) attendance and certification in order to identify the effects of this training on actual prescribing. We will also link providers to the publicly available CMS NPPES dataset to identify provider specialty and organizational affiliation.
2. Aggregate Data: We will link provider 3-digit zip codes to the American Community Survey and ruralurban commuting area (RUCA) codes to identify neighborhood-level measures of socioeconomic status, such as median income level and % living below the poverty level, and to categorize member location as rural or urban.

4. If yes, for each proposed linkage above, please describe your method or selected algorithm (e.g., deterministic or probabilistic) for linking each dataset. If you intend to develop a unique algorithm, please describe how it will link each dataset.

Deterministic for each

5. If yes, attach or provide below a complete listing of the variables from <u>all sources</u> to be included in the final linked analytic file.

1. SCOPE of practice attendance: including date of certification, number of times attended, training outcome variables (e.g., stated beliefs about opioid usefulness, desire to change prescribing rates, etc.).
2. CMS NPPES: including National Provider Number, Entity Type Code, Provider Organization Name, Provider Practice Location, Provider Taxonomoy codes
3. American Community Survey / Census data: including total population, median household income, number of persons living below the poverty level, number of persons without high school education, number of persons living in rural area
4. Rural Urban Commuting Area codes

6. If yes, please identify the specific steps you will take to prevent the identification of individual patients in the linked dataset.

Individual patient-level data will not be linked. Our study team will not attempt to identify any patients and any data shared outside of the study team (such as that used for publication) will be aggregate data with cell sizes larger than 11.

X. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Do you anticipate that the results of your analysis will be published or made publically available? If so, how do you intend to disseminate the results of the study (e.g.; publication in professional journal, poster presentation, newsletter, web page, seminar, conference, statistical tabulation)? Any and all publication of CHIA Data must comply with CHIA's cell size suppression policy, as set forth in the Data Use Agreement. Please explain how you will ensure that any publications ***will not disclose a cell less than 11***, and percentages or other mathematical formulas that result in the display of a cell less than 11.

We will publish our results in high-impact peer-reviewed journals and through presentation at local, national, and international scientific conferences. As per the Data Use Agreement, we will not disclose any cell less than 11 to members outside of our study team. We will carefully review all abstracts, posters, and manuscripts prior to publication to ensure that only aggregate data meeting these requirements are included.

2. Describe your plans to use or otherwise disclose CHIA Data, or any Data derived or extracted from such Data, in any paper, report, website, statistical tabulation, seminar, or other setting that is not disseminated to the public.

N/A

3. What will be the lowest geographical level of analysis of data you expect to present for publication or presentation (e.g., state level, city/town level, zip code level, etc.)? Will maps be presented? If so, what methods will be used to ensure that individuals cannot be identified?

Our primary results will be the effect of CME training on prescribing volume and quality (Aims 1 and 2). While 3-digit zip codes will be used in assigning demographic information as control variables, they will not be the primary output. Any descriptive statistics using geographical data will be suppressed such than no cell that includes fewer than 11 individuals will be presented. We will not present maps with finer detail than the 3-digit zip code, from which individual patients cannot be identified.

4. Will you be using CHIA Data for consulting purposes?
   - ☐ Yes
   - ☒ No

5. Will you be selling standard report products using CHIA Data?
   - ☐ Yes
   - ☒ No

6. Will you be selling a software product using CHIA Data?

☐ Yes
☒ No

7. Will you be using CHIA Data as in input to develop a product (i.e., severity index took, risk adjustment tool, reference tool, etc.)

☐ Yes
☒ No

8. Will you be reselling CHIA Data in any format not noted above?

☐ Yes
☒ No

If yes, in what format will you be reselling CHIA Data?

Click here to enter text.

9. If you have answered "yes" to questions 5, 6, 7 or 8, please provide the name and a description of the products, software, services, or tools.

Click here to enter text.

10. If you have answered "yes" to questions 5, 6, 7 or 8, what is the fee you will charge for such products, software, services or tools?

Click here to enter text.

XI. APPLICANT QUALIFICATIONS

1. Describe your previous experience using claims data. This question should be answered by the primary investigator and any co-investigators who will be using the Data.

Marhsall Drake is a PhD candidate in Economics at Boston University. He has experience working with large, sensitive datasets hosted on external servers. He has methodological experise in estimating program treatment effects.

Alex Hoagland, PhD, is a PhD candidate in Health Economics at Boston University. He has experience using claims data including the Colorado APCD and Medicare. He also has methodological expertise on estimating program treatment effects in a health education context, as will be done within this proposal.

Raymond Fisman, PhD is a Professor of Economics at Boston University. He has extensive experience working with large, sensitive datasets along with methodological expertise in causal inference, program evaluations, and applied microeconomics.

2. **Resumes/CVs**: When submitting your Application package on IRBNet, include résumés or curricula vitae of the principal investigator and co-investigators. (These attachments will not be posted on the internet.)

XII. USE OF AGENTS AND/OR CONTRACTORS

By signing this Application, the Organization assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to contractors. The Organization must have a written agreement with the agent of contractor limiting the use of CHIA Data to the use approved under this Application as well as the privacy and security standards set forth in the Data Use Agreement. CHIA Data may not be shared with any third party without prior written consent from CHIA, or an amendment to this Application. CHIA may audit any entity with access to CHIA Data.

Provide the following information for **all** agents and contractors who will have access to the CHIA Data. [*Add agents or contractors as needed.]*

AGENT/CONTRACTOR #1 INFORMATION	
Company Name:	Click here to enter text.
Company Website	Click here to enter text.
Contact Person:	Click here to enter text.
Title:	Click here to enter text.
E-mail Address:	Click here to enter text.
Address, City/Town, State, Zip Code:	Click here to enter text.
Telephone Number:	Click here to enter text.
Term of Contract:	Click here to enter text.

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

N/A

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

N/A

3. Will the agent or contractor have access to and store the CHIA Data at a location other than the Organization's location, off-site server and/or database?

☐ Yes
☒ No

4. If yes, a separate Data Management Plan **must** be completed by the agent or contractor.

AGENT/CONTRACTOR #1 INFORMATION	
Company Name:	Click here to enter text.
Company Website	Click here to enter text.
Contact Person:	Click here to enter text.
Title:	Click here to enter text.
E-mail Address:	Click here to enter text.
Address, City/Town, State, Zip Code:	Click here to enter text.
Telephone Number:	Click here to enter text.
Term of Contract:	Click here to enter text.

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

N/A

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

N/A

3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database?

☐ Yes
☒ No

4. If yes, a separate Data Management Plan **must** be completed by the agent or contractor.

[INSERT A NEW SECTION FOR ADDITIONAL AGENTS/CONTRACTORS AS NEEDED]

XIII. ATTESTATION

By submitting this Application, the Organization attests that it is aware of its data use, privacy and security obligations imposed by state and federal law *and* confirms that it is compliant with such use, privacy and security standards. The Organization further agrees and understands that it is solely responsible for any breaches or unauthorized access, disclosure or use of CHIA Data, including, but not limited to, any breach or unauthorized access, disclosure or use by any third party to which it grants access.

Organizations approved to receive CHIA Data will be provided with Data following the payment of applicable fees and upon the execution of a Data Use Agreement requiring the Organization to adhere to processes and procedures designed to prevent unauthorized access, disclosure or use of data.

By my signature below, I attest: (1) to the accuracy of the information provided herein; (2) this research is not funded by a source requiring the release of raw data to that source; (3) that the requested Data is the minimum necessary to accomplish the purposes described herein; (4) that the Organization will meet the data privacy and security requirements described in this Application and supporting documents, and will ensure that any third party with access to the Data meets the data use, privacy and security requirements; and (5) to my authority to bind the Organization.

Signature: (Authorized Signatory for Organization)	/s/ William P. Segarra, MA, JD, MPH
Printed Name:	**William Segarra**
Title:	Director, Industry Contracts and Agreements
Date:	/d/ Jul 27, 2022

Attachments:
A completed Application must have the following documents attached to the Application or uploaded separately to IRBNet:
☐ 1. IRB approval letter and protocol (if applicable), or research methodology (if protocol is not attached)
☐ 2. Data Management Plan (including one for each agent or contractor that will have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database);
☐ 3. CVs of Investigators (upload to IRBNet)

APPLICATIONS WILL NOT BE REVIEWED UNTIL THEY ARE COMPLETE, INCLUDING ALL ATTACHMENTS.