# Commonwealth of Massachusetts
# Center for Health Information & Analysis (CHIA)
# Non-Government APCD Request for Data

*This form is to be used by all applicants, except Government Agencies, as defined in 957 CMR 5.02.*

*Please note: CHIA is undertaking a number of key measures to help ensure that the processing of MA APCD applications is done as efficiently as possible. As such, we will only be accepting applications from Massachusetts based payers and providers who submit Case Mix and APCD data as well as Massachusetts-based students and researchers. Applications from others will not be accepted from May 13, 2015 to November 1, 2015. All applications received prior to May 13, 2015 will be processed.*

***In order for your application to be processed, you must submit the required application fee. Please consult the fee schedules for APCD data for the appropriate fee amount. A remittance form with instructions for submitting the application fee is available on the CHIA website.***

## I. GENERAL INFORMATION

| APPLICANT INFORMATION | |
|---|---|
| Applicant Name: | Meng-Yun Lin |
| Title: | PhD Candidate |
| Organization: | Boston University School of Public Health |
| Project Title: | Does Physician Leadership Play a Role in Increasing ACO Efficiency?—Evidence from the Alternative Quality Contract |
| Mailing Address: | 715 Albany Street, Boston, MA 02118 |
| Telephone Number: | 617-414-6976 |
| Email Address: | mylin@bu.edu |
| Names of Co-Investigators: | Drs. Kathleen Carey, James Burgess, Austin Frakt |
| Email Addresses of Co-Investigators: | kcarey@bu.edu, jfburges@bu.edu, frakt@bu.edu |
| Original Data Request Submission Date: | 10-22-2015 |
| Dates Data Request Revised: | |
| Project Objectives (240 character limit) | We seek to understand the impacts of physician leadership on performance of Accountable Care Organizations (ACOs) in cost containment and quality improvement by studying provider entities signing the Alternative Quality Contract (AQC) with Blue Cross Blue Shield of MA (BCBS). |
| Project Research Questions (if applicable) | We will investigate whether physician-led ACOs are more efficient in controlling costs and improving quality of care under incentive global payment—a bundled payment with sizable quality bonuses. Specifically, we will study 16 provider organizations that are governed by either physicians or affiliated hospitals and paid by BCBS under AQC (hereafter AQC groups).<br><br>The specific aims of our research project are as follows:<br>**Aim 1:** Evaluate differences in efficiency improvement between physician-led and hospital-led AQC groups. |

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|---|---|
| | **Aim 2:** Identify major areas of efficiency improvement achieved by physician-led and hospital-led AQC groups. |

## II. PROJECT SUMMARY

Briefly describe the purpose of your project and how you will use the requested CHIA data to accomplish your purpose.

The creation and operation of an ACO requires involvement of various providers. The major providers that sponsor and manage ACOs are hospitals and physician groups. Though previous studies have documented the strong role of physicians in funding and leading ACOs and expressed opinions about how crucial physician leadership is to ACO performance, it is not yet clear the extent to which physician leadership may influence the success of ACOs in reality. To answer this question, there is a need to evaluate variations in quality improvement and cost containment among ACOs under leadership of different providers. We seek to do so through studies of 16 AQC groups using data from the Massachusetts All-Payer Claims Database (APCD) for the following two research aims.

**Aim 1:** Evaluate differences in efficiency improvement between physician-led and hospital-led AQC groups.

AQC was only implemented among health maintenance organization (HMO) and point-of-service (POS) enrollees because these plans require enrollees to designate PCPs who can therefore be held accountable for the health of their patients. APCD data makes it possible to identify patient population whose health outcomes and costs are attributable to providers of AQC groups. We will use APCD provider, member eligibility, and product files to identify our study sample--BCBS members who enrolled in a HMO or POS plan and designate a PCP who is affiliated with an AQC group. Specially, to examine efficiency, we will measure length of stay of inpatient admission, costs per covered member, and racial/ethnic disparities in health outcomes using APCD medical and pharmacy claim data.

**Aim 2:** Identify major areas of efficiency improvement achieved by physician-led and hospital-led AQC groups.

To better understand the mechanism of efficiency improvement, the study will decompose efficiency into cost and quality components. We hypothesize that hospital-led AQC groups achieve greater cost containment in the inpatient dimension; while physician-led AQC groups achieve greater quality improvement in outpatient dimension. We will use APCD data to construct measure of inpatient spending and admission rates for ambulatory care sensitive conditions of AQC groups run by different leadership. Also, APCD data will allow us to conduct risk adjustment that relies on diagnoses in claims record to produce individual risk scores.

As ACOs are still a work in process, findings of this study can influence how payers, providers, and policymakers experiment with future iterations of health care delivery reform.

## III. FILES REQUESTED

Please indicate the databases from which you seek data, and the year(s) of data requested.

| ALL PAYER CLAIMS DATABASE | Year(s) Of Data Requested<br>Current Yrs. Available<br>2009 – 2013 |
|---|---|

| | |
|---|---|
| ☒Medical Claims | ☒2009 ☒2010 ☒2011 ☒2012 ☒2013 |
| ☒Pharmacy Claims | ☒2009 ☒2010 ☒2011 ☒2012 ☒2013 |
| ☐Dental Claims | ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 |
| ☒Member Eligibility | ☒2009 ☒2010 ☒2011 ☒2012 ☒2013 |
| ☒Provider | ☒2009 ☒2010 ☒2011 ☒2012 ☒2013 |
| ☒Product | ☒2009 ☒2010 ☒2011 ☒2012 ☒2013 |

**IV. REQUESTED DATA ELEMENTS [APCD Only]**

State and federal privacy laws limit the use of individually identifiable data to the minimum amount of data needed to accomplish a specific project objective. Please use the APCD Data Specification Workbook to identify which data elements you would like to request and attach this document to your application.

**V. FEE INFORMATION**

Please consult the fee schedules for APCD data ) and Case Mix data, available at http://chiamass.gov/regulations/#957_5, and select from the following options:

**APCD Applicants Only**

☒ Academic Researcher
☐ Others (Single Use)
☐ Others (Multiple Use)

Are you requesting a fee waiver?

☒ Yes
☐ No

If yes, please submit a letter stating the basis for your request. Please refer to the fee schedule for qualifications for receiving a fee waiver. If you are requesting a waiver based on the financial hardship provision, please provide documentation of your financial situation. Please note that non-profit status alone isn't sufficient to qualify for a fee waiver.

**VI. MEDICAID DATA [APCD Only]**

Please indicate here whether you are seeking Medicaid Data:

☐ Yes
☒ No

Federal law (42 USC 1396a(a)7) restricts the use of individually identifiable data of Medicaid recipients to uses that are directly connected with the administration of the Medicaid program. If you are requesting Medicaid data from Level 2 or above, please describe in detail why your use of the data meets this requirement. Applications requesting Medicaid 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 Medicaid program. MassHealth may impose additional requirements on applicants for Medicaid data as necessary to ensure compliance with federal laws and regulations regarding Medicaid.

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| NA |

**VII. FILTERS**

If you are requesting APCD elements from Level 2 or above, describe any filters you are requesting to use in order to limit your request to the minimum set of records necessary to complete your project. (For example, you may only need individuals whose age is less than 21, claims for hospital services only, or only claims from small group projects.)

| APCD FILE | DATA ELEMENT(S) FOR WHICH FILTERS ARE REQUESTED | RANGE OF VALUES REQUESTED |
|---|---|---|
| Medical Claims | MC001 | BCBS of MA |
| Pharmacy Claims | PC001 | BCBS of MA |
| Dental Claims | N/A | N/A |
| Membership Eligibility | ME001 | BCBS of MA |
| Provider | PV001 | BCBS of MA |
| Product | HD002 | BCBS of MA |

**IX. PURPOSE AND INTENDED USE**

1. Please explain why completing your project is in the public interest.

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| This project investigates whether physician leadership helps promote efficacy of ACOs. Specifically, we seek to examine whether physicians are superior in achieving cost containment and quality improvement by investigating the 16 provider entities signing the AQC with BCBS of MA. As the ACO movement is a leader of the volume-to-value transition, impacts of physician leadership in achieving efficiency improvement will need to be demonstrated. The results of our analyses will inform policymakers as they evaluate policies regulating the formation and operation of ACOs, which is crucial to the success of delivery reform in the post-Affordable Care Act era. Also, our results will provide insights about performance of ACOs run by hospitals and physicians, which will be of use to CMS to further tailor its ACO programs. |

2. **Attach** a brief (1-2 pages) description of your research methodology. (This description will not be posted on the internet.)

3. Has your project received approval from your organization's Institutional Review Board (IRB)? Please note that CHIA will not review your application until IRB documentation has been received (if applicable).
   - ☒ Yes, and a copy of the approval letter is attached to this application.
   - ☐ No, the IRB will review the project on _____.
   - ☐ No, this project is not subject to IRB review.
   - ☐ No, my organization does not have an IRB.

## X. APPLICANT QUALIFICATIONS

1. Describe your qualifications to perform the research described or accomplish the intended use of CHIA data.

Meng-Yun Lin is a PhD candidate in Health Services Research at Boston University School of Public Health. She is experienced in working with sizable and complex health data (Health Care and Utilization Project Database, Marketscan, and State Hospital Discharge Datasets). She has been working as a Research Data Analyst at Boston Medical Center for four years.

Kathleen Carey holds a PhD in Economics from Boston University. She is a professor at Boston University School of Public Health. She has published extensively on hospitals and on the effects of organizational structure on provider performance. She has authored a number of studies that investigate the effects of organizational change in the hospital industry on competition and cost efficiency.

James Burgess holds a PhD in Economics from Brown University. He is a professor at Boston University School of Public Health and a health economist with more than 25 years of extensive health care management, research, and educational experience. He has served as editors of many academic journals in the fields of health economics and health services research.

Austin Frakt holds a PhD in Statistical and Applied Mathematics from Massachusetts Institute of Technology. He is an associate professor and health economist affiliated with the Boston University School of Medicine and School of Public Health. He also serves on the editorial board for *Health Services Research* and the Translation and Dissemination Institute Advisory Committee for AcademyHealth.

All investigators have worked with sensitive health data previously.

2. Attach résumés or curricula vitae of the applicant/principal investigator, key contributors, and of all individuals who will have access to the data. (These attachments will not be posted on the internet.)

## XI. DATA LINKAGE AND FURTHER DATA ABSTRACTION

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

1. Do you intend to link or merge CHIA Data to other datasets?
   - ☒ Yes
   - ☐ No linkage or merger with any other database will occur

2. If yes, will the CHIA Data be linked or merged to other individual patient level data (e.g. disease registries, death data), individual provider level data (e.g., American Medical Association Physician Masterfile) , facility level (e.g., American Hospital Association data) or with aggregate data (e.g., Census data)? [check all that apply]
   - ☐ Individual Patient Level Data

   What is the purpose of the linkage:

NA

What databases are involved, who owns the data and which specific data elements will be used for linkage:

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| NA |

☐ Individual Provider Level Data

What is the purpose of the linkage:

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| NA |

What databases are involved, who owns the data and which specific data elements will be used for linkage:

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| NA |

☒ Individual Facility Level Data

What is the purpose of the linkage:

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| Quality and costs of inpatient care vary by hospital characteristics, such as ownership type, hospital size, teaching affiliation, and community hospital designation. Therefore, to properly evaluate the differences in efficiency between AQC groups led by hospitals and physician groups, it is necessary for us to control for factors that are relevant to patient outcomes. |

What databases are involved, who owns the data and which specific data elements will be used for linkage:

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| We will link hospitals to the *Medicare Hospital Compare* (MHC) dataset which is a public-use file by hospital name and/or location to get information on quality and outcomes for individual hospitals. We will identify hospital discharges from the medical claims file (MC094=002) and link them with facility name and location from the provider file based on provider ID (MC026 or MC024 if MC026 is missing). Then we will link the Medicare Hospital Compare dataset based on hospital name and location. |

☒ Aggregate Data

What is the purpose of the linkage:

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| Variation in health outcomes and costs may be attributable to difference in patient socioeconomic status, which could affect use of care, and area health resources, which could impact referral pattern and utilization of procedures requiring specialists. To properly evaluate the differences in efficiency between AQC groups led by hospitals and physician groups, it is crucial to control for these factors. |

What databases are involved, who owns the data and which specific data elements will be used for linkage:

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| We will link member geographic data (zip code or county, ME017/ME110 and ME3/ME4) from the |

member eligibility file to the corresponding geographic indicator in the *Area Health Recourses File* (AHRF), *American Communities Survey* (ACS), and *Census data* (all are public available data) to get information on health care supply, socioeconomic status, and regional characteristics.

3. 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 .

We will first identify provider groups of interest along with their affiliated primary care physicians in the APCD provider file based on PV002, PV012, and PV056. The set of selected providers is linked by provider ID (PV002=ME046) with member eligibility data which is further linked to the product file by product ID (ME040=PR001) to get details on health plan. Then, the study will define study population based on plan information and retrieve corresponding medical and pharmacy claims by carrier ID and member ID (ME001=MC001 & ME107=MC137 & ME117=MC141; ME001=PC001 & ME107=PC107 & ME117=PC108). Information on providers who rendered claimed services will be obtained by linking claim data with the provider file by provider ID (MC079=PR001; PC056=PR001). Last, Census data and elements from the AHRF/ ACS will be merged by zip-code and FIPS county-code respectively. Hospital characteristics from the MHC database will be incorporated by hospital name and location.

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

Linking APCD data to the supplementary data above only provide additional information about providers and environment in which a member lives and receives care. It does not increase the likelihood that individuals can be identified. Therefore, the linking of these datasets presents no additional risk of jeopardizing patient confidentiality. However, the confidentiality of individuals in the data is of great importance to us, and we will do all in our power to ensure that individuals not be identified.

5. If yes, and the data mentioned above is not in the public domain, please attach a letter of agreement or other appropriate documentation on restrictions of use from the data owner corroborating that they agree to have you initiate linkage of their data with CHIA data and include the data owner's website.

## XII. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from such data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting.

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| We plan to submit research results for publication in peer-reviewed, academic journals and present findings at research conferences. Our results will consist of averages for large groups of members, so no identification of individual members or providers will be possible. To ensure confidentiality, we will not report results of small sample size (<10 members). |

2. Will the results of your analysis be publicly available to any interested party? Please describe how an interested party will obtain your analysis and, if applicable, the amount of the fee.

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| Our research may result in one or more publications which are generally searchable online and may involve an access fee to the publishers. However, we will make our published findings available for free to any interested party via email. |

3. Will you use the data for consulting purposes?

☐ Yes
☒ No

4. Will you be selling standard report products using the data?

☐ Yes
☒ No

5. Will you be selling a software product using the data?

☐ Yes
☒ No

6. Will you be reselling the data?

☐ Yes
☒ No

If yes, in what format will you be reselling the data (e.g., as a standalone product, incorporated with a software product, with a subscription, etc.)?

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| NA |

7. If you have answered "yes" to questions 3, 4 or 5, please describe the types of products, services or studies.

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| NA |

## XIII. USE OF AGENTS AND/OR CONTRACTORS

Third-Party Vendors. Provide the following information for all agents and contractors who will work with the CHIA Data.

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| Company Name: | NA |
| Contact Person: | |
| Title: | |
| Address: | |
| Telephone Number: | |
| E-mail Address: | |
| Organization Website: | |

8. Will the agent/contractor have access to the data at a location other than your location, your off-site server and/or your database?

   ☐ Yes
   ☒ No

   If yes, please provide information about the agent/contractor's data management practices, policies and procedures in your Data Management Plan.

9. Describe the tasks and products assigned to this agent or contractor for this project.

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| NA |

10. Describe the qualifications of this agent or contractor to perform such tasks or deliver such products.

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| NA |

11. Describe your oversight and monitoring of the activity and actions of this agent or subcontractor.

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| NA |

**XIV. ASSURANCES**

Applicants requesting and receiving data from CHIA pursuant to 957 CMR 5.00 ("Data Recipients") will be provided with data following the execution of a data use agreement that requires the Data Recipient to adhere to processes and procedures aimed at preventing unauthorized access, disclosure or use of data, as detailed in the DUA and the applicant's CHIA-approved Data Management Plan.

Data Recipients are further subject to the requirements and restrictions contained in applicable state and federal laws protecting privacy and data security, and will be required to adopt and implement policies and procedures designed to protect CHIA data in a manner consistent with the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA).

**By my signature below, I attest to: (1) the accuracy of the information provided herein; (2) my organization's ability to meet CHIA's minimum data security requirements; and (3) my authority to bind the organization seeking CHIA data for the purposes described herein.**

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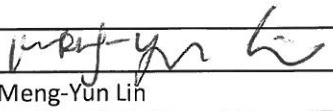
| Signature: |  |
| Printed Name: | Meng-Yun Lin |
| Title | PhD Candidate |
| Original Data Request Submission Date: | 10-22-2015 |
| Dates Data Request Revised: | |