

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](#). Organizations 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@chiamass.gov if you have additional questions about how to complete this form.

The Application 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@chiamass.gov.
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:	Expanding the Evidence for Policy on Vertical Integration in Health Care
IRBNet Number:	Click here to enter text.
Organization Requesting Data (Recipient):	President and Fellows of Harvard College (through the School of Public Health)
Organization Website:	www.hsph.harvard.edu
Authorized Signatory for Organization:	Wendy Chan
Title:	Associate Director of Research Administration, Harvard TH Chan School of Public Health
E-Mail Address:	wchan@hsh.harvard.edu
Telephone Number:	617-432-8135
Address, City/Town, State, Zip Code:	677 Huntington Avenue, Boston MA 02115
Data Custodian: (individual responsible for organizing, storing, and archiving Data)	Scott Yockel
Title:	University Research Computing Officer
E-Mail Address:	Scott_yockel@harvard.edu
Telephone Number:	817-793-6634
Address, City/Town, State, Zip Code:	1350 Massachusetts Ave, Cambridge, MA 02138
Primary Investigator (Applicant): (individual responsible for the research team using the Data)	Meredith B. Rosenthal
Title:	C. Boyden Gray Professor of Health Economics and Policy
E-Mail Address:	meredith_rosenthal@harvard.edu
Telephone Number:	617-432-3418
Address, City/Town, State, Zip Code:	677 Huntington Avenue, Boston MA 02115
Names of Co-Investigators:	Anna Sinaiko, Vilsa Curto
E-Mail Addresses of Co-Investigators:	asinaiko@hsph.harvard.edu; vcurto@hsph.harvard.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 **or** written request to CHIA, with approval being subject to CHIA's regulatory restrictions and approval process. Unauthorized use is a material violation of your Organizations's Data Use Agreement with CHIA.

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

- | | | |
|---|--|---|
| <input type="checkbox"/> Epidemiological | <input type="checkbox"/> Health planning/resource allocation | <input type="checkbox"/> Cost trends |
| <input type="checkbox"/> Longitudinal Research | <input type="checkbox"/> Quality of care assessment | <input type="checkbox"/> Rate setting |
| <input type="checkbox"/> Reference tool | <input checked="" type="checkbox"/> Research studies | <input type="checkbox"/> Severity index tool (or other derived input) |
| <input type="checkbox"/> Surveillance | <input type="checkbox"/> Student research | <input type="checkbox"/> Utilization review of resources |
| <input type="checkbox"/> Inclusion in a product | <input type="checkbox"/> 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.

Health care delivery has become increasingly consolidated over the last decade. One prevalent form of consolidation is the integration of physicians with hospitals and health systems. The share of physicians working in private practice fell from 60 percent to 47 percent between 2012 and 2022 while the share of physicians directly employed by or contracted with hospitals or hospital-owned practices increased from 29 percent to 41 percent.¹ Hospitals and hospital-owned practices that employ or contract with physicians are often part of larger health systems that include hospitals, primary care physicians (PCPs), and specialists; in 2023, 62 percent of community hospitals were part of a health system.²

The predominant concern with consolidation is that physician-hospital or physician-health system ownership and affiliations (which we term “vertical relationships”) may result in higher prices because physicians gain negotiating power through their acquirers. Several empirical studies show that vertical relationships increase spending, largely through higher prices.³⁻⁹ In a nationally representative survey of physicians, the most commonly reported reason for seeking hospital and system acquisition was to improve payment rates (e.g., negotiating higher rates with commercial insurers).¹

Empirical studies have begun to examine the claim that vertical integration improves quality of care.^{3,13} Prior studies have found no effect of vertical integration on patient outcomes, such as readmissions or risk-adjusted mortality.¹⁴⁻¹⁷ Many of these studies are limited in their conclusions due to the inability to establish a causal relationship, paucity of outcomes, and focus on later-stage quality measures that are unlikely to be directly affected by changes to vertical relationships (e.g., mortality, readmissions). Two observational studies found that physician-hospital integration was associated with unnecessarily intensive service utilization, such as higher procedure rates, that was neither efficient nor in the best clinical interest of patients.^{16,18} Another analysis in a single metropolitan area found that multispecialty clinic acquisition by health systems led to a small increase in cancer screening rates and appropriate ED use.¹⁹ Further, there is evidence suggesting that physician-hospital relationships may improve care delivery processes through increased implementation of health IT and care management.²⁰⁻²² One gap in the related literature is the effect of vertical relationships among PCPs on quality measures related to care coordination, ACSC management, and improved use of follow-up visits.

Measures of timeliness, ACSC management, and continuity are important to study given the previous null effects on late-stage health outcomes such as readmissions and mortality and the well-established relationship between vertical consolidation and increased spending.³⁻⁹ Even if there are no changes in mortality or readmissions after vertical relationships form, there could be changes in the continuity and quality of care (e.g., faster follow-up after an acute event) that accompany higher spending. Understanding the effect of vertical relationships on care delivery processes is a critical component of the policy assessment of benefits and harms associated with consolidation. In this study, we investigate the effect of PCP-health system vertical relationships on measures of quality of care, including low-value care services, follow-up after hospitalization, ACSC utilization, timeliness of specialty care, and practice-site care fragmentation. In this project we will extend our research on the impact of vertical integration to consider a broader set of outcomes and impacts on community hospitals that are not part of larger systems. We will also help build the evidence base around the existence and magnitude of the benefits that health systems typically claim when justifying vertical integration to regulators and the public. Where we test hypotheses about benefits, we will also consider offsetting harms from price increases and other cost impacts. We have two specific aims:

Aim 1: To assess the impact of vertical integration between physicians and health systems on independent community hospitals. This aim would directly extend the work of our prior Arnold Ventures funded project. We are requesting 2017-2021 Massachusetts All-Payer Claims Database to which we will link contemporaneous Massachusetts Health Quality Partners Massachusetts Provider Database, and update our measures of physician-health system vertical integration. Using these data, we will examine the impact of this form of vertical integration on patient flows, prices, and commercial revenue at independent community hospitals. We will also look more broadly at the impact of VI on the case mix of independent community hospitals, which may find themselves seeing a larger share of Medicaid (MassHealth) patients as

the more profitable admissions are steered away. For the proposed work we will focus on Massachusetts because we have already mapped out VI of physician practices using the MHQP data and we can build efficiently on this platform.

Aim 2: To assess the impact of vertical integration between primary care physicians (PCPs) and health systems on effectiveness and efficiency of care. PCPs act as the general managers of patient health, and vertical integration between PCPs and health systems could change care delivery processes through greater access to a network of in-system resources and providers. This could reduce redundant or low-value service use through better coordination and information sharing, improve timeliness of care between settings or types of providers, and increase care continuity. Using the same data and previously published empirical approach, we will investigate the impact of PCP-health system vertical relationships on measures of effectiveness and efficiency of care related to the PCP's expanded network of system providers and resources. Findings from this analysis will allow us to contribute to the literature that weighs potential benefits from vertical integration against their demonstrated harms (price increases and the steering of patients to lower-value providers.) As part of this aim, we will update our previous price analyses and have the opportunity to examine longer-term price effects by incorporating additional years of data.

References:

1. Kane CK. Policy Research Perspectives. American Medical Association; 2023. <https://www.ama-assn.org/system/files/2022-prp-practice-arrangement.pdf>
2. The American Hospital Association. Fast Facts on U.S. Hospitals, 2023. Published 2023. Accessed August 23, 2023. <https://www.aha.org/statistics/fast-facts-us-hospitals>
3. Neprash HT, McWilliams JM. Provider Consolidation and Potential Efficiency Gains : A Review of Theory and Evidence. *Antitrust Law Journal*. 2019;82(2):551-578. doi:<https://heinonline.org/HOL/P?h=hein.journals/antil82&i=563>
4. Neprash HT, Chernew ME, Hicks AL, Gibson T, McWilliams JM. Association of Financial Integration Between Physicians and Hospitals with Commercial Health Care Prices. *JAMA Internal Medicine*. 2015;175(12):1932-1939. doi:<https://doi.org/10.1001/jamainternmed.2015.4610>
5. Baker LC, Bundorf MK, Kessler DP. Vertical Integration: Hospital Ownership of Physician Practices Is Associated with Higher Prices and Spending. *Health Affairs*. 2014;33(5):756-763. doi:<https://doi.org/10.1377/hlthaff.2013.1279>
6. Carlin CS, Feldman R, Dowd B. The Impact of Provider Consolidation on Physician Prices. *Health Economics*. 2017;26(12):1789-1806. doi:<https://doi.org/10.1002/hec.3502>
7. Capps C, Dranove D, Ody C. The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending. *Journal of Health Economics*. 2018;59:139-152. doi:<https://doi.org/10.1016/j.jhealeco.2018.04.001>
8. Lin H, McCarthy IM, Richards M. Hospital Pricing Following Integration with Physician Practices. *Journal of Health Economics*. 2021;77. doi:<https://doi.org/10.1016/j.jhealeco.2021.102444>
9. Koch TG, Wendling BW, Wilson NE. How Vertical Integration Affects the Quantity and Cost of Care for Medicare Beneficiaries. *Journal of Health Economics*. 2017;52:19-32. doi:<https://doi.org/10.1016/j.jhealeco.2016.12.007>
10. Agha L, Frandsen B, Rebitzer JB. Causes and Consequences of Fragmented Care Delivery: Theory, Evidence, and Public Policy. NBER Working Paper Series. Published online April 2017. doi:Working Paper 23078
11. Frandsen BR, Joynt KE, Rebitzer JB, Jha AK. Care fragmentation, quality, and costs among chronically ill patients. *Am J Manag Care*. 2015;21(5):355-362.
12. Cebul RD, Rebitzer JB, Taylor LJ, Votruba ME. Organizational Fragmentation and Care Quality in the U.S. Healthcare System. *Journal of Economic Perspectives*. 2008;22(4):93-113. doi:10.1257/jep.22.4.93
13. Post B, Buchmueller T, Ryan AM. Vertical Integration of Hospitals and Physicians: Economic Theory and Empirical Evidence on Spending and Quality. *Medical Care Research and Review*. 2018;75(4):399-433.
14. Ho V, Metcalfe L, Vu L, Short M, Morrow R. Annual Spending per Patient and Quality in Hospital-Owned Versus Physician-Owned Organizations: an Observational Study. *J GEN INTERN MED*. 2020;35(3):649-655. doi:10.1007/s11606-019-05312-z
15. Scott KW, Orav EJ, Cutler DM, Jha AK. Changes in Hospital-Physician Affiliations in U.S. Hospitals and Their Effect on Quality of Care. *Ann Intern Med*. 2017;166(1):1-8. doi:10.7326/M16-0125
16. Madison K. Hospital-Physician Affiliations and Patient Treatments, Expenditures, and Outcomes. *Health Services Research*. 2004;39(2):257-278. doi:10.1111/j.1475-6773.2004.00227.x
17. Koch TG, Wendling BW, Wilson NE. The Effects of Physician and Hospital Integration on Medicare Beneficiaries' Health Outcomes. *The Review of Economics and Statistics*. Published online May 6, 2020:1-38.

18. Post B, Alinezhad F, Mukherjee S, Young GJ. Hospital-Physician Integration Is Associated With Greater Use Of Cardiac Catheterization And Angioplasty. *Health Affairs*. 2023;42(5):606-614. doi:10.1377/hlthaff.2022.01294
19. Carlin CS, Dowd B, Feldman R. Changes in Quality of Health Care Delivery after Vertical Integration. *Health Serv Res*. 2015;50(4):1043-1068. doi:10.1111/1475-6773.12274
20. Bishop TF, Shortell SM, Ramsay PP, Copeland KR, Casalino LP. Trends in Hospital Ownership of Physician Practices and the Effect on Processes to Improve Quality. *Am J Manag Care*. 2016;22(3):172-176.
21. McCullough JS, Snir EM. Monitoring technology and firm boundaries: Physician–hospital integration and technology utilization. *Journal of Health Economics*. 2010;29(3):457-467. doi:10.1016/j.jhealeco.2010.03.003
22. Lammers E. The Effect of Hospital–Physician Integration on Health Information Technology Adoption. *Health Economics*. 2013;22(10):1215-1229.

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.*

In its most recent Cost Trends report, the Massachusetts Health Policy Commission noted that after half a decade of slower growth in health care spending, cost trends have accelerated to a troubling extent in the Commonwealth. Health care spending growth has exceeded the Commonwealth's benchmark and now exceeds the national average. Thus, there is a crisis of health care affordability and a compelling need for evidence-informed policy intervention. From our previous work using the APCD, we know that provider vertical consolidation and joint contracting have increased prices and cost of care in Massachusetts. It is essential to understand to what extent quality gains should be considered by regulatory authorities that can use their investigatory and enforcement powers to challenge consolidation and joint contracting. Similarly, the full costs of vertical integration are likely to include negative spillover effects on non-consolidating providers including but not limited to rendering non-aligned community hospitals financially precarious. To ensure that these insights make an impact, our dissemination plan includes sharing our results with the Health Policy Commission and Attorney General's office, in addition to publishing our findings on peer-reviewed journals.

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 fully-insured and self-insured plans. APCD data are refreshed and updated annually and made available to approved data users. For more information about APCD Data, including available years of data and a full list of elements in the database please refer to 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. CHIA is currently supporting requests for claims data from 2016 to 2022. Requests made outside of these years may not be supported by CHIA and will be considered on a case-by-case basis. Please specify the years of data that are being requested: 2017-2021.
3. Specify below the data files requested for this Project, and provide your justification for requesting *each* file.

<input checked="" type="checkbox"/> Medical Claims
<p>Describe how your research objectives require Medical Claims data: Our study proposes to examine the quality of care for patients whose PCP is vertically integrated vs. those that are not part of such relationships. Quality measures will be focused on process of care including timely follow-up after hospitalization or a diagnosis of cancer, receipt of low-value services and receipt of recommended services. We will also examine evidence of poor quality using measures of avoidable hospitalization and ED visits. For all of these analyses, claims data will be the primary source of information about what care patients received and what diagnoses were recorded.</p>
<input type="checkbox"/> Pharmacy Claims
<p>Describe how your research objectives require Pharmacy Claims data: Click here to enter text.</p>
<input type="checkbox"/> Dental Claims
<p>Describe how your research objectives require Dental Claims data: Click here to enter text.</p>
<input checked="" type="checkbox"/> Member Eligibility
<p>Describe how your research objectives require Member Eligibility data:</p> <p>Member eligibility data is necessary for us to understand the demographics of the people in our sample (zip- code of residence, age, etc.). We will also need to account for discontinuous enrollment in our analyses (since lack of follow up, for example, could be a function of being uninsured.) Member identifiers allow us to track unique patients over time, which is essential for the quality measures we intend to capture. The data also allow us to assign a particular type of health plan (HMO vs. PPO) to each patient-year.</p>

<input checked="" type="checkbox"/> Provider
Describe how your research objectives require Provider data: We aim to study vertical integration of primary care providers with hospitals and health systems. Thus we require unencrypted provider identifiers to characterize ownership and joint contracting relationships. We also need to know the provider’s NPPES taxonomy (e.g., internal medicine physician). We also need to know if the provider is an individual or an entity.
<input checked="" type="checkbox"/> Product
Describe how your research objectives require Product data: The product file will allow us to capture the size of the patient’s deductible (if any), which we intend to include as a right-hand side variable in our models because benefit design can be an important predictor of patient demand for health care services, including the low-value and recommended care that our quality measures capture.

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

ZIP code and state geographic subdivisions are available for Massachusetts residents and providers only. Small population ZIP codes are combined with larger population ZIP codes. One ZIP Code per person (MEID) per year has been assigned based on the ZIP code/state reported in the member eligibility record’s earliest submission year month. If the record does not have an MEID, assignment is based on distinct OrgID/Carrier Specific Unique Member ID.

Non-Massachusetts ZIP codes and state codes except for CT, MA, ME, NH, NY, RI, and VT are suppressed.

Select one of the following options.

<input checked="" type="checkbox"/> 3-Digit Zip Codes (standard)	<input type="checkbox"/> 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.

<input type="checkbox"/> Year (YYYY) (Standard)	<input type="checkbox"/> Month (YYYYMM) ***	<input checked="" type="checkbox"/> Day (YYYYMMDD) *** [for selected data elements only]
<p>*** If requested, provide justification for requesting Month or Day. Refer to specifics in your methodology:</p> <p>We request day of service to make it possible for us to capture receipt of follow-up care within specific time intervals (e.g., outpatient visits <14 days after ED visit or inpatient discharge).</p>		

c. National Provider Identifier (NPI)

Select one of the following options.

<input type="checkbox"/> Encrypted National Provider Identifiers (standard)	<input checked="" type="checkbox"/> Decrypted National Provider Identifiers***
<p>*** If requested, provide justification for requesting decrypted National Provider Identifier(s). Refer to specifics in your methodology:</p> <p>In order to measure vertical integration and joint contracting, we need to link individual physicians to their health systems and hospitals. This will be accomplished using the NPI (and the MHQP Massachusetts Provider Database).</p>	

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 identifiable 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.

Researchers must provide the following information for MassHealth to determine how the disclosure of identifiable MassHealth claims data is directly related to the administration of the MassHealth program:

- How does the project relate directly to the administration of the Medicaid program?
- What specific Medicaid program, policy, rule or law will be affected or changed based on the outcome of this project?
- How will MassHealth’s objectives be helped or impaired by approving this project?
- Will the results of the research have the potential for:
 - reducing cost of the Medicaid program,
 - improving access for recipients, and/or
 - increasing quality of care to recipients?
- Please describe the project deliverables the researchers will provide to MassHealth

- Please describe how MassHealth can use the project deliverables in administration of the MassHealth program.

3. Organizations approved to receive Medicaid Data will be required to execute a [Medicaid Acknowledgment 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.

To measure our key independent variable – whether a physician is involved in a vertical relationship with a hospital or health system – we will link physicians to the MHQP Massachusetts Provider Directory (MPD) and Massachusetts Health Policy Commission’s Registered Provider Organization (RPO) database, which provide information on organizational relationships for Massachusetts physicians. We will use the NPI as a linking variable from the provider file to create our measure of vertical integration as described in our previous paper: Curto, V, Sinaiko, AD and Rosenthal, MB, 2022. Price Effects of Vertical Integration And Joint Contracting Between Physicians And Hospitals In Massachusetts: Study examines the price effects of vertical integration and joint contracting between physicians and hospitals. Health Affairs, 41(5), pp.741-750.

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.

We will use a deterministic match by NPI.

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

Our final analytic file will include indicators derived from the MHQP MPD and RPO for vertical integration of each physician with any health system, with small, medium, and large systems. We classified health systems as large if the share of hospital discharges was at least 20%; as medium if the share was at least 10% but less than 20%; and otherwise, as small.

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

Our linkages will only help us characterize the provider organization and contractual relationships through which a particular physician is paid to deliver care. These variables will not be used to identify individual patients. We will not report (directly or indirectly) data for any cell sizes with fewer than 11 patients. In general, our results will be aggregated to the level of provider VI types (small, medium, large, not VI) in which cell sizes are in the hundreds of thousands.

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.

Our dissemination plan includes sharing our results with the Health Policy Commission and Attorney General's office, in addition to publishing our findings on peer-reviewed journals. We will not report (directly or indirectly) data for any cell sizes with fewer than 11 patients. In general, our results will be aggregated to the level of provider VI types (small, medium, large, not VI) in which cell sizes are in the hundreds of thousands. Moreover, our primary results will be regression coefficients and summary data will only be presented to describe the sample characteristics as a whole. All summary tables will be constructed to avoid small cell sizes.

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.

None

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?

The lowest geographical level of analysis we expect to present is the Health Service Area. These areas are relatively large comprising thousands of patients and we will use this level of analysis to summarize the extent

of vertical integration rather than any patient characteristics. We may present a map of the geographical distribution of vertical integration by HSA in our paper.

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 tool, 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.

Drs. Rosenthal, Sinaiko, and Curto have extensive expertise in health economics and conduct research that aims to have a meaningful impact on U.S. health policy. They have all worked on previous studies that obtain, link, and analyze large medical claims datasets such as those in the proposed project. Dr. Rosenthal has 25 years of

experience in health economics research, with a particular focus on the policies and practices of commercial insurers that affect health care delivery. Dr. Sinaiko has expertise evaluating the impact of health policy initiatives on spending and utilization. Dr. Curto is an economist with expertise in competition, health care markets, and the analysis of large health care data sets using rigorous econometric methods.

Drs. Rosenthal, Sinaiko, and Curto have had several prior successful research collaborations, and have previously disseminated research findings nationally and locally to policymakers and large private employer purchasing coalitions, including the US Department of Justice and the Massachusetts Health Policy Commission. Most recently, they have used both the MHQP MPD and MA APCD to examine the take-up and impact of tiered networks in Massachusetts.

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.

Click here to enter text.

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.

Click here to enter text.

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.

Click here to enter text.

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.

Click here to enter text.

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)	 Digitally signed by Wendy Chan Date: 2024.03.19 17:34:17 -04'00'
Printed Name:	Wendy Chan
Title:	Associate Director, Sponsored Program Administration
Date:	March 19, 2024

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 ATTACHMENT



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