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:	Ariel Pakes (primary applicant)
Title:	Professor of Economics
Organization:	Harvard University and the National Bureau for Economic Research
Project Title:	Prices, Incentives and Hospital-Physician Integration in Health Care
Mailing Address:	Littauer Room 117 / Cambridge, MA 02138
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Names of Co-Investigators:	Katherine Ho, Mark Shepard, Karen Stockley, Luca Maini, and Ashvin Gandhi
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Original Data Request Submission Date:	
Dates Data Request Revised:	
Project Objectives (240 character limit)	To evaluate the implications of recent changes in provider affiliations for negotiated payment rates, referral patterns and treatment intensity for different insurer-determined payment incentives for providers to reduce costs and improve quality. Note: This is a re-submission for the previously approved Release 2.1 Project of the same name (Project # 577576-1).
Project Research Questions (if applicable)	1. To what extent have ownership and contractual relationships between providers, including physician groups, hospitals, and outpatient facilities, changed in recent years?

	2. How have these changes in provider affiliations affected the payment rates negotiated between providers and insurers? 3. Do employers serve as effective agents for their employees in their choice of insurance plans? How do employee responses to these insurance plan deductibles vary over time and interact with provider payment rates, provider concentration, referalls, and other provider incentives? 4. Did physician referrals and the intensity of treatment respond to these changes in provider affiliations and payment rates? If so, did the response differ by the type of reimbursement method? 5. What are the implications of these changes in provider consolidation for cost and quality of care and how should that inform antitrust policy with respect to vertical and horizontal mergers?

II. PROJECT SUMMARY

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

We plan to investigate the changes in ownership and contractual relationships between providers (physician groups, outpatient facilities and hospitals) in Massachusetts in recent years, their relationship with provider payment mechanisms, and their impact on provider payment rates, referral patterns, treatment intensity and costs. This requires that we establish links between plans, the providers in their networks, medical care utilization and payments to providers. We will begin by using the CHIA data, linked with the SK&A office-based physician dataset and other datasets on provider affiliation, to identify changes in ownership and affiliation between providers over time and describe how they interact with the introduction by private insurers of physician incentives to control costs. We will then document the extent to which patient referrals to particular hospitals, treatments chosen for particular conditions, and payment rates to physicians and hospitals are associated with changes in provider ownership and differential provider incentives.

The second stage of the project will estimate models of patient referrals to hospitals and outpatient units, and physicians' treatment choices for their patients conditional on diagnosis and severity, that take into account the affiliations and incentives of referring physicians. We will then estimate models of the price negotiations between insurers and providers to help understand how the size and scope of provider organizations affects their ability to negotiate high prices. As an input into the price negotiation model, we will also estimate employer and individual demand for insurance and individual demand responses to insurance financial incentives. These insurance demand estimates will also allow us to investigate the extent to which employers serve as effective agents for their employees in their choice of insurance plans. We will also analyze to what extent employee responses to these insurance plan deductibles vary over time and interact with provider payment rates, provider concentration, referalls, and other provider incentives. Together the analyses will provide a framework in which we can analyze the impact of both different incentive schemes and provider mergers on costs and quality of care that will be informative to policy makers. They will also help us understand providers' private incentives to consolidate given the cost-control incentives set by insurers.

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 Current Yrs. Available 2009 – 2013
X Medical Claims	X 2009 X 2010 X 2011 X 2012 X 2013
X Pharmacy Claims	X 2009 X 2010 X 2011 X 2012 X 2013
Dental Claims	2009 2010 2011 2012 2013
X Member Eligibility	X 2009 X 2010 X 2011 X 2012 X 2013
X Provider	X 2009 X 2010 X 2011 X 2012 X 2013
X Product	X 2009 X 2010 X 2011 X 2012 X 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

X Academic Researcher
Others (Single Use)
Others (Multiple Use)

Are you requesting a fee waiver?

X 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:

X 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.

This project will identify the impact of provider consolidation on costs and quality of care. It will also provide guidance on ways in which the design of insurance plans (e.g. the cost-control incentives given to physicians and the hospitals and providers included in the network) can affect referrals, costs and quality. The results will assist MassHealth in evaluating the potential benefits of introducing particular physician incentive schemes or expanding or reducing network size.

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		
Pharmacy Claims		
Dental Claims		
Membership Eligibility		
Provider		
Product		

IX. PURPOSE AND INTENDED USE

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

The high cost of health care is an important issue of concern for public policy. Recent policy changes (e.g. the introduction of Accountable Care Organizations) have created incentives for mergers of provider organizations. This project will identify ways in which ownership and contractual relationships between providers, in tandem with the incentives faced by physicians, affect costs, referrals and the quality of care. Our results will provide guidance for policy-makers on both the effect of different reimbursement methods and the antitrust issues raised by mergers between providers. They will also help identify the magnitude of cost savings likely to result from initiatives like Accountable Care Organizations, taking account of follow-on effects like provider mergers and changes in provider prices.

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.

   X No, the IRB will review the project on IN PROGRESS.

   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.

Ariel Pakes is the Thomas Professor of Economics in the Department of Economics at Harvard University. Before coming to Harvard he was the Charles and Dorothea Dilley Professor of Economics at Yale University. He received his doctorate degree in economics from Harvard University. He is a research associate at the National Bureau of Economics and a fellow of both the American Academy of Arts and Sciences and the Econometric Society. He is pre-eminent in the field of Industrial Organization, having developed or co-developed many of the now-standard methodologies used to estimate models of demand and pricing in this field. We plan to use these methods in the second stage of our analysis.

Katherine Ho is an Associate Professor of Economics at Columbia University. She holds a PhD in Economics from Harvard University and a BA and MA in Mathematics from Cambridge University. She is also a research associate at the National Bureau of Economic Research. She specializes in the industrial organization of the medical care sector and has considerable experience working with confidential data in empirical health economic research.

Mark Shepard is a Post-Doctoral Fellow in Aging and Health Care Economics at the National Bureua of Economic Research. He holds a Ph.D. in Economics from Harvard University and a B.A. in Applied Math from Harvard University. Mark has experience analyzing claims data from the Massachusetts CommCare market for his dissertation project.

Karen Stockley, Luca Maini, and Ashvin Gandhi are economics doctoral students at Harvard University. Both have completed course work in health care economics and are pursuing research projects in health care economics for their dissertations. Ashvin has worked with confidential health care data in the past, and Karen has co-authored numerous peer-reviewed articles and policy briefs analyzing changes in the health insurance coverage, access to health care, and health care use of Massachusetts residents following the 2006 health reform using sensitive survey data.

Pakes and Ho have co-authored a series of papers studying the hospital referral choices of physicians under different incentive schemes (2014 American Economic Review, 2012 International Journal of Industrial Organization, 2014 NBER Working Paper). All investigators have worked with sensitive health data in past projects.

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?

   X 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:

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

   X Individual Provider Level Data

   What is the purpose of the linkage:

- To identify affiliations between individual physicians and provider groups. - To provide additional information on provider specialty and demographic data. - To validate NPIs in the CHIA data

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

We will link providers to the SK&A office-based physician dataset to accurately link providers to practices and identify affiliations between practices and hospitals. The SK&A database is owned by Cegedim. We have purchased a license to use this database for this project. To supplement the information on provider affiliations in the SK&A data, we will also merge on provider ownership relationships extracted from audited financial statements and public charities report forms filed with the Massachusetts Office of the Attorney General (publicly available). We will not identify providers in published analyses and reports, nor will we report information that would make deductive disclosure possible. The variables used for linkage will be the NPI and, when the NPI is incomplete or invalid, the License ID. For observations where both the NPI and License ID are not available, we may use the following variables to implement probabilistic matching: Provider First, Middle, and Last name; Gender Code; Provider DOB (year only); Address, Primary Specialty Code, Provider Telephone.

We will similarly use these variables to match providers to lists of affiliates with provider organizations, such as groups participating in an Alternative Quality Contract (AQC) or an Accountable Care Organization (ACO). ACO membership data is made publicly available by the Centers for Medicare and Medicaid Services (CMS). Other group membership data will be collected from the groups or their affiliates.

We will also link providers to the National Plan & Provider Enumeration System (NPPES) file. The NPPES file is publicly available and distributed by the US Centers for Medicare & Medicaid Services. The NPPES file contains information on all providers who have registered for an NPI. We will link the APCD to NPPES in order to validate the NPIs on the CHIA data and to provide validation of provider specialty. The variable used for deterministic linkage will be the NPI.

X Individual Facility Level Data

What is the purpose of the linkage:

- To provide additional information on hospital characteristics and quality

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

We will link hospitals to the American Hospital Association Annual Survey Database for hospital characteristics, and to the Medicare Hospital Compare dataset for quality and aggregate health outcome data. This is needed to describe provider characteristics and understand physicians' referral choices. The variable used for linkage will be the National Provider Identifier (NPI). For observations where the NPI is incomplete or invalid we will use the Entity Name to match hospitals.

The Medicare Hospital Compare is publicly available and distributed by the US Centers for Medicare & Medicaid Services.
The American Hospital Association Annual Survey Database is owned by the American Hospital Association.

X Aggregate Data

What is the purpose of the linkage:

- To provide additional information on geographic characteristics and employer characteristics

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

1) Geographic area linkages: We will link member geographic data (ZIP, city, county) to the Area Resource File (publicly available from the US Department of Health and Human Services, Health Resource and Services Administration) and the American Communities Survey/Census data (publicly available from US Census bureau) to provide information on healthcare supply, socioeconomic status, and regional characteristics. This is needed to account for patient characteristics that might affect medical care utilization or choice of provider. We do not need to identify individual patients, mererly to link characteristics of their ZIP code.
2) Employer linkages: We will link employers to publicly available information on employer health benefit offerings from the US Department of Labor's Form 5500 data sets (public domain). This will provide information on premiums, broker, and administrative fees for fully insured and self-insured employer health plans. These are needed for our models of insurance demand. We will not identify specific employers in published analyses and reports, nor will we report information that would make deductive disclosure possible. The variable used for deterministic linkage will be the Employer EIN.

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 .

Please see the explanations above for our proposed methodology for each type of linkage.

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

Since we will link the data only to aggregate datasets, which do not increase our likelihood or ability to identify individual patients, the linkages will not jeopardize patient confidentiality. As discussed in the data security and integrity section, we will take extensive steps to ensure the confidentiality of the data.

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.

We are attaching the license agreements for the SK&A database and the American Hospital Association Annual Survey Database.

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.

We propose to disseminate our work through published peer-reviewed economics journals, working papers, and conferences. We are participants in the National Bureau for Economic Research's industrial organization program and healthcare program, both of which hold conferences that are widely attended by other researchers and policy-makers. The results will include summary statistics and analyses completed using the data; however we will aggregate all statistics to groups (including at least 10 patients) so that no identification of patients will be possible from our published results.

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.

The results will be available for no fee at the researchers' websites.

3. Will you use the data for consulting purposes?
   Yes
X No

4. Will you be selling standard report products using the data?
   Yes
X No

5. Will you be selling a software product using the data?
   Yes
X No

6. Will you be reselling the data?
   Yes
X 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.)?

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

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.

Company Name:	
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.

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

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

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.

Signature:	
Printed Name:	
Title	
Original Data Request Submission Date:	
Dates Data Request Revised:	