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.

***NOTE:** 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:	Vicki Fung
Title:	Assistant Professor of Medicine
Organization:	Massachusetts General Hospital & Harvard Medical School
Project Title:	The Effects of Provider Supply and Insurance Benefit Design on Medical Care Use and Outcomes
Mailing Address:	50 Staniford St, 9th Floor
Telephone Number:	617-643-6187
Email Address:	vfung@mgh.harvard.edu
Names of Co-Investigators:	John Hsu
Email Addresses of Co-Investigators:	John.Hsu@mgh.harvard.edu
Original Data Request Submission Date:	May 6, 2015
Dates Data Request Revised:	
Project Objectives (240 character limit)	This project will examine how the provider supply and insurance benefit design are associated with medical care use, clinical event rates, and spending.
Project Research Questions (if applicable)	Our main research questions examine the impact of provider supply and insurance benefit design on: 1) Medical care use, including outpatient visits (by diagnosis and provider type), prescription drug use (e.g., adherence) 2) Clinical event outcomes, including emergency department (ED) visits and hospitalizations overall and for specific diagnoses 3) Medical spending, including component and total spending, and out-of-pocket spending

II. PROJECT SUMMARY

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

This project investigates the effects of provider supply and insurance benefit design on medical care utilization, outcomes, and spending. In theory, increasing patient access to providers and reducing patient cost-sharing for high-value services could improve outcomes. We will start by examining these questions within the context of mental health (MH) care and then expand to other disease areas.

Within MH care, recent state and federal policy efforts have focused on mandating parity between mental health and medical/surgical insurance benefits (e.g., cost-sharing levels, treatment limits). Previous studies have found limited effects of parity policies in other settings (e.g., enrollees in the Federal Employee Health Benefit Program); but there is more limited evidence within Massachusetts and among individuals with different types of insurance. Separately, reports suggest that provider supply is limited, resulting in shortages of mental health providers and primary care providers in many areas. If supply is inadequate, policies focused on improving insurance benefit could have limited effects to the extent that there are insufficient numbers of providers to meet corresponding increases in demand for services. Psychiatrists are the specialists least likely to accept insured patients (as opposed to private pay), further reducing access to MH specialists. In addition, the use of limited and tiered provider networks by private plans in Masscahusetts has grown over the last decade, which could affect access to providers and the effective provider supply available to any given enrollee. These data highlight the need to assess supply at multiple levels, including the total number of providers in the local area, as well as the number of providers available to individuals conditional on their insurance coverage and provider participation.

Using the Massachusetts APCD, we will examine the effects of provider supply and insurance benefit design on 1) medical care use (e.g., outpatient visit rates overall and by specialty and provider type, medication use and adherence, quality measures); 2) clinical event outcomes (e.g., ED visits and hospitalizations), and medical spending, including patient out-of-pocket and total spending. We will explore multiple measures benefit design (e.g., overall cost-sharing, cost-sharing for specific types of services) and of provider supply (e.g., total provider counts within a local area, providers included in plan networks, measures that incorporate distance and time travel to providers, and empricially derived measures based on claims by insurance product and type).

III. FILES REQUESTED

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

ALL PAYER CLAIMS DATABASE	Single or Multiple Use	Year(s) Of Data Requested Current Yrs. Available 2009 – 2013
X Medical Claims	X Single Use ☐Multiple Use	X 2009 X 2010 X 2011 X 2012 X 2013
X Pharmacy Claims	X Single Use ☐Multiple Use	X 2009 X 2010 X 2011 X 2012 X 2013
☐Dental Claims	☐Single Use ☐Multiple Use	☐2009 ☐2010 ☐2011 ☐2012 ☐2013
X Member Eligibility	X Single Use ☐Multiple Use	X 2009 X 2010 X 2011 X 2012 X 2013
X Provider	X Single Use	X 2009 X 2010 X 2011 X 2012 X 2013

X Product	☐Multiple Use X Single Use ☐Multiple Use	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?

☐ Yes
X 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.

Questions regarding access to providers and optimal benefit design are directly relevant for the administration of the Medicaid program. We will examine primary care and specialty provider

participation in the Medicaid program using empirical claims data to assess the subset of providers with claims for Medicaid enrollees, as well as geographic variation in provider access and longitudinal changes over time. The longitudinal analysis will include examination of the effects of recent payment increases for Medicaid primary care providers in 2013-2014. This policy increased payment rates for PCPs caring for Medicaid enrollees to 100% of the Medicare rates (an estimated 32 percentage point payment increase for PCPs in Massachusetts). To our knowledge, there is little evidence on the impact of this policy on access to care or outcomes.

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	None	
Pharmacy Claims	None	
Dental Claims	NA	
Membership Eligibility	None	
Provider	None	
Product	None	

IX. PURPOSE AND INTENDED USE

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

Massachusetts Health Reform and the Affordable Care Act seek to expand insurance coverage in the state and nationwide. There is a need to understand the effects of these policies on access to care, as well as potential mechanisms that could limit access, including provider capacity/supply and benefit design (e.g., out-of-pocket costs). Insurance benefit design and cost-sharing represent central mechanisms through which payers attempt to modulate patient demand for services. Evidence suggest that cost-sharing can reduce utilization, but at times these reductions can be for both clinically necessary and unnecessary services. Better understanding how to structure cost-sharing to reduce unintended consequences is critical for informing safe and affordable insurance coverage. In short, there is a need to understand both the supply and demand-side determinants of access to care, outcomes, and spending, especially in the context of expanded insurance coverage.

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).

   X 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.

Vicki Fung, PhD, is an Assistant Professor of Medicine at Harvard Medical School and a Senior Scientist at the Mongan Institute for Health Policy, Massachusetts General Hospital. She received her doctoral training in Health Services and Policy Analysis at the University of California, Berkeley and post-doctoral training at the Philip R. Lee Institute for Health Policy Studies at the University of California, San Francisco. She has extensive experience conducting health policy research using large claims datasets, including within the Medicare program.

John Hsu, MD, MBA, MSCE, is the Director of the Program for Clinical Economics and Policy Analysis within the Mongan Institute for Health Policy at Massachusetts General Hospital, Associate Professor of Medicine, Harvard Medical School, and an Associate Professor of Health Policy, Department of Health Care Policy, Harvard Medical School. He is the principal investigator of a number of federally funded studies examining innovations in health care financing and delivery using large datasets. He also serves on the CHIA APCD Data Release Committee.

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:

We will link with the publicly available CMS NPI file on providers to obtain supplemental information on providers, including provider type, name, address, and specialty. Although the APCD Provider file also include this information, we will link to the CMS NPI file to obtain cleaner/standardized fields (e.g., name), and to compare location information from the address fields with the APCD provider file data (there are reports that the CMS NPI addresses can sometimes contain home addresses instead of office addresses).

We will also link providers with publicly available on providers from the Commonwealth of Massachusetts Board of Registration in Medicine. This website includes supplemental information on physicians, including their license status, address, affiliations, insurance accepted, Medicaid status, whether they are accepting new patients, and education and training. We will use these data to supplement and compare with the other sources of provider information.

We will also link providers with publicly available CMS data on Part D prescribing (Part D Prescriber Public Use Files). These data will provide information on the number of Part D claims by NPI and drug, and the number of Medicare beneficiaries who received prescriptions by NPI. These data will be used to provide information on the potential number of Medicare beneficiaries seen by providers to aid in assessment of the patient/payer composition of provider panels to supplement our provider analyses in the absence of individual-level Medicare data through the APCD.

Lastly, we will link NAIC codes from the Product file to publicly available insurer information form the National Association of Insurance Commissioners to obtain information on the insurance carrier. These data will be used to help assess or validate benefit design characteristics and provider networks derived from our analyses at the plan level for a small sample of plans using publicly available information from plan websites.

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

We will link with two CMS databases, which we will link by NPI:

1. NPI downloadable file; data elements: e.g., provider name, address, specialty, entity type
2. Part D Prescriber PUF; data elements: e.g., Part D claims, costs, and days supply, number of beneficiaries prescribed (overall and by patient characteristics (e.g., over/under age 65)

We will also link with publicly available Massachusetts physician profiles owned by the Commonwealth of Massachusetts Board of Registration in Medicine by NPI or physician license # (if NPI missing).
Data elements: e.g., license status, address, training (e.g., years completed), whether accepting new patients, insurance plans/Medicaid accepted

Lastly, we will link with publicly available data on insurance carriers (e.g., carrier name) from the National Association of Insurance Commissioners using the NAIC code.

☐ Individual Facility 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 Aggregate Data

What is the purpose of the linkage:

To complete this project, patients and providers in the APCD will be linked to area-level information contained in various datasets. This includes the Area Health Resource File (AHRF), the U.S. Census and American Community Survey (ACS), and the Local Area Unemployment Statistics Database available through the Bureau of Labor Statistics (BLS). We will use the AHRF to assess total provider supply and facility information at the local area level. We will use the U.S. Census and ACS to link with area-level information on socioeconomic status (e.g., median income, educational attainment) and local insurance mix (e.g., % uninsured, % commercial, % Medicaid, % Medicare). We will use data from the BLS to assess local area unemployment levels. We will link this information at the lowest level available using level 2 data (county or ZIP code). These measures of socioeconomic status, unemployment, and insurance mix represent potential explanatory variables and confounders related to provider supply and responses to cost-sharing/benefit design.

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

Area Health Resource File
Owner: Health Resources and Services Administration
Example of information contained: counts of primary care providers, psychiatrists, psychologists, social workers, and other specialists; counts of community health centers, inpatient facilities/beds

U.S. Census Data and American Community Survey
Owner: US Census Bureau
Example of information contained: measures of poverty, income, education, insurance mix (% uninsured, Medicaid, Medicare, private, other)

Local Area Unemployment Statistics Database
Owner: Bureau of Labor Statistics
Example of information contained: local unemployment rate

For all datasets we will use geographic information on members in the Member Eligiblity File and providers in the Provider File to link characteristics of their local area, including: ME03 - county of member, ME015 – city of member, ME017 - ZIP code of member, PV1- county of provider, PV2 – county of provider mailing address, PV006 – Provider Census Tract, PV021 – ZIP code of provider. If necessary, we will also use the same geographic information available in the medical and pharmacy claims data.

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 link our datasets using a deterministic algorithm, e.g., we will match NPI in one file to NPI in another file.

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

Linking to these provider or aggregate datasets will not increase the ease or likelihood of identifying individual patients as the information is provided in aggregate form. In addition, although we will link to information on providers and insurance carriers, our analyses and findings will not identify any individual providers, hospitals, or insurance carriers; i.e., we are not interested in the effects of specific providers or carriers on outcome, but rather patterns of average outcomes across patients facing different benefit design features or provider supply levels. All results will be presented as aggregate averages across patients, providers, and plans. Moreover, we will take extensive steps to ensure the confidentiality of the data as outlined in our data management plan.

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.

   N/A – all data in public domain

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.

The results will be submitted for publication in academic, peer-reviewed journals and presented, as appropriate at academic conferences and workshops. All results will be reported as aggregate relationships and summary statistics. Thus, no identification of patients, providers, or plans will be possible.

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.

We plan to publish our findings in the peer-reviewed literature. These will be available per the journal's usual policies (e.g., through subscriptions). We also anticipate presenting our findings at national research conferences.

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:	Biostat Data Consulting Inc.
Contact Person:	Mary Price
Title:	Biostatistical Consultant
Address:	1840 Lincoln Avenue, Saint Paul, MN 55105
Telephone Number:	651-690-1981
E-mail Address:	price.bdc@gmail.com
Organization Website:	N/A

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

   X No – All data will be accessed through secure servers that reside behind the Partners firewall. Mary Price will access these data using secure VPN.

   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.

Mary Price will conduct the data management and analysis for this project. She is a long standing programmer/analyst with Drs. Fung and Hsu. Under the supervision of the study investigators, she will create and manage the appropriate data structures required for this project.

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

Mary Price has worked as a senior programmer/analyst for our team for over a decade. She has extensive experience working with and conducting analysis using large claims files, including Medicare claims and large commercial claims databases. She has a masters degree in biostatistics from the University of California, Berkeley.

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

We meet with Mary regularly (at least weekly) to plan activities and monitor progress.

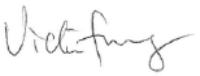
XIV. ASSURANCES

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:	Vicki Fung
Title	Assistant Professor, Department of Medicine, Harvard Medical School; Senior Scientist, Mongan Institute for Health Policy, Massachusetts General Hospital
Original Data Request Submission Date:	
Dates Data Request Revised:	