

**Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Government MA 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 MA 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:	Karen Freund, MD, MPH
Title:	Vice Chair of Medicine
Organization:	Tufts Medical Center
Project Title:	Gender Disparities in Stability of Insurance Coverage & Chronic Disease Management
Mailing Address:	800 Washington Street, Box #63, Boston, MA 02111
Telephone Number:	(617) 636-5065
Email Address:	kfreund@tuftsmedicalcenter.org
Names of Co-Investigators:	Nancy Kressin, PhD; Amresh Hanchate, PhD; Norma Terrin, PhD; Amy LeClair, PhD; Alejandro Moreno-Koehler, MPH
Email Addresses of Co-Investigators:	nkressin@bu.edu ; Hanchate@bu.edu ; nterrin@tuftsmedicalcenter.org ; aleclair@tuftsmedicalcenter.org ; amorenokoehler@tuftsmedicalcenter.org
Original Data Request Submission Date:	10/29/15
Dates Data Request Revised:	02/03/16
Project Objectives (240 character limit)	1. Assess the impact of coordinated care on processes and outcomes of chronic disease management, comparing women and men. 2. Determine whether insurance instability is a major reason for fragmented care, and poor chronic disease processes outcomes, comparing women and men.
Project Research Questions (if applicable) or Business Use Case(s):	Question 1: For women and men with chronic diseases such as diabetes, do patients have better care processes and outcomes if their care is coordinated in one health care system? Question 1A: Are women more likely to receive fragmented care in multiple health care systems,

	<p>and does this contribute to poorer health processes and outcomes?</p> <p>Question 2: For women and men with chronic diseases such as diabetes, do patients receive better care if they have stable, continuous insurance coverage without gaps?</p> <p>Questions 2A: Are women more likely to have unstable insurance coverage, with gaps or switches in their insurance coverage, and does this contribute to poorer health processes and outcomes?</p>
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II. PROJECT SUMMARY

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

Gender health disparities in the processes and outcomes of chronic disease care are pervasive and well documented. There are many reasons for these gender disparities, with one major reason being the lack of coordination of care between the various doctors providing care for chronic diseases. Traditionally, care for women has been fragmented (occurring in more than one health care system), in part due to lower rates of health insurance coverage and greater rates of insurance instability, with more frequent changes or loss in insurance, resulting in the need to change care providers. Women also have a greater number of health care providers for comprehensive care including family medicine, internal medicine and gynecology, as well as their various subspecialists. Coordination in health care between health care providers may lead to better disease outcomes by ensuring consistent access to services to deliver guideline-recommended processes of chronic disease care such as disease monitoring and access to medications. When patients receive care in a single system of care, coordination between providers is enhanced by shared electronic records with access to visits notes, medication lists and results of prior test results. Care across differing systems increases the possibilities of either duplicated or missed care, incomplete medication lists, and care without coordination. Thus fragmented care (providers or care across multiple sites of care), may contribute to disparities in outcomes of chronic disease. We will conduct new comparative analyses to assess the impact of insurance instability (changes in insured status and/or insurance providers) on processes and outcomes of chronic disease care, comparing women and men. We will examine longitudinal care linked across insurers and providers for diabetes, hypertension, congestive heart failure, asthma, and chronic obstructive pulmonary disease, using the Massachusetts All Payer Claims Database. We will report our findings in peer reviewed publications, which will be publically available without charge to the public, payers, policy makers and providers, who might use this information to better develop methods to improve coordinated care.

III. FILES REQUESTED

Please indicate which MA APCD file(s) you are requesting, the year(s) of data requested, and your justification for requesting each file. Please refer to the MA APCD [Release 4.0 Documentation Guides](#) for details of the file contents.

<p>MA ALL PAYER CLAIMS DATABASE FILES</p>	<p>Year(s) Of Data Requested Current Yrs. Available</p> <p><input checked="" type="checkbox"/> 2010 <input checked="" type="checkbox"/> 2011 <input checked="" type="checkbox"/> 2012 <input checked="" type="checkbox"/> 2013 <input checked="" type="checkbox"/> 2014</p>
<p><input checked="" type="checkbox"/> Medical Claims</p>	<p>Please provide justification for requesting Medical Claims file: We will investigate the impact of health insurance stability and care coordination on processes and outcomes of chronic disease management. We are requesting medical claims to determine chronic disease conditions, the care patients received (inpatient, outpatient office visits, blood labs) as well as the location of that care (whether it takes place in one health care system or multiple systems).</p>
<p><input checked="" type="checkbox"/> Pharmacy Claims</p>	<p>Please provide justification for requesting Pharmacy Claims file: We will investigate the impact of health insurance stability and care coordination on processes and outcomes of chronic disease management, including appropriate medication management. For individuals with chronic disease, proper medication management is an important indicator of care. We are requesting pharmacy claims to determine patients’ use of pharmacies and obtaining specific prescriptions for chronic disease management. While we cannot know whether or not patients take their medication as prescribed by their doctors, we will utilize this data to assess obtaining a prescriptions as a proxy for medication use.</p>
<p><input type="checkbox"/> Dental Claims</p>	<p>Please provide justification for requesting Dental Claims file: N/A</p>
<p><input checked="" type="checkbox"/> Member Eligibility</p>	<p>Please provide justification for requesting Member Eligibility file: We are requesting member eligibility files to determine patients’ insurance coverage status. Type of insurance (e.g. private vs. Medicaid) and insured status (e.g. insured vs. uninsured) and gaps in insurance with no coverage are a major focus of our analysis as we are interested in determining how changes in insurance type and status impact the care patients with chronic disease receive and the timeliness with which they receive that care.</p>
<p><input type="checkbox"/> Provider (encrypted NPI) Standard or <input checked="" type="checkbox"/> Provider* (unencrypted NPI)</p>	<p>Please provide justification for requesting Provider file: We will investigate the impact of care coordination within or across health care systems on processes and outcomes of chronic disease management. We are requesting Provider level data, including unencrypted NPI, to determine the health care system for each specific inpatient and outpatient care visit. We will use this data to asses if each patient’s care is “coordinated” (takes place in one health care system) or “fragmented” (takes place in multiple health care systems). To do so, we must know their providers and their affiliations.</p>

	<p>*Please provide justification for requesting unencrypted NPI (if requested). Refer to specifics in your methodology:</p> <p>One of our central hypotheses is that fragmented care – care that occurs in multiple health care systems – is associated with poorer outcomes. We will investigate the impact of care coordination within or across health care systems on processes and outcomes of chronic disease management. We will use this data to assess if each patient’s care is “coordinated” (takes place in one health care system) or “fragmented” (takes place in multiple health care systems). To do so, we must know their providers and their affiliations.</p> <p>The only way we can measure fragmented care is by identifying specific providers and their affiliations. We will link National Provider Identifiers (NPIs) from the APCD to provider-level data. For example, if a patient normally sees Dr. A, but then sees Dr. B, and Dr. B is in the same practice as Dr. A, we would not consider that fragmented. The care is still taking place in the same health care system. We will be using provider level data solely for the purposes of creating a variable for “coordinated” or “fragmented” care. We will <u>not</u> be conducting analyses by individual providers or health care systems, or conducting analyses to make statements about individual providers or health care systems.</p> <p>We discuss this in the first paragraph of the <i>Measures</i> in our methodology.</p>
<input type="checkbox"/> Product	<p>Please provide justification for requesting Product file:</p> <p>N/A</p>

IV. GEOGRAPHIC DETAIL

Please choose one of the following geographic options for MA residents:

<input type="checkbox"/> 3 Digit Zip Code (MA)	<input checked="" type="checkbox"/> 5 Digit Zip Code (MA)
<p>***Please provide justification for requesting 5 digit zip code. Refer to specifics in your methodology:</p> <p>It is critical to adjust our analytic models by variables which are known to be major social determinants of health. Census data through linkages to 5 – digit zip code is a common method used as a proxy for socioeconomic status and race/ethnicity (which is largely missing in the APCD). We request five (5) digit zip codes in order to link with Census data to determine median household income (HHI) and the percentages of different races/ethnicities. This measure will be used as a marker of the social determinants of health, including socioeconomic status and race/ethnicity, in our analyses.</p> <p>We discuss this in the paragraph on <i>Covariates</i> in our methodology.</p>	

V. DATE DETAIL

Please choose one option from the following options for dates:

<input type="checkbox"/> Year (YYYY) (Standard)	<input checked="" type="checkbox"/> Month (YYYYMM) ***	<input type="checkbox"/> Day (YYYYMMDD) *** [for selected data elements only]
<p>*** If requested, please provide justification for requesting Month or Day. Refer to specifics in your methodology: We will investigate the impact of health insurance stability and care coordination on processes and outcomes of chronic disease management. Processes of chronic disease management include frequency of primary care visits to assess the chronic condition, or frequency of lab testing. For example, for diabetes management, guidelines of care recommend management visits every 6 months, A1C testing every 6 months, and urine testing for microscopic proteinuria every 12 months. We request month as well as year of service in order to establish the timeline and timeliness of processes of care. We discuss this in the fourth paragraph of the <i>Measures</i> in our methodology.</p>		

VI. FEE INFORMATION

Please consult the fee schedules for MA APCD 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 refer to the [Application Fee Remittance Form](#) and submit a letter stating the basis for your request (if required). 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.

VII. 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.

Our prior work indicates that women with MassHealth prior to insurance reform had the greatest amount of instability in insurance coverage and experienced longer periods of uninsured status. Our prior work also

demonstrated that women with gaps in insurance had delays in processes of care and, therefore, poorer health outcomes. Our research findings for the proposed study will have direct policy implication that will benefit the administration of the MassHealth Program:

1. Our determination that MassHealth patients with chronic diseases such as diabetes receive better care if their care is coordinated in one health care system will help MassHealth develop policies and recommendations to patients and providers about use of a single health care system to coordinate their care.
2. Our demonstration that women have poorer outcomes than men due to fragmented care in multiple systems will help MassHealth develop policies that encourage women to receive all their care in one coordinated system.
3. Our demonstration that any gaps in insurance result in poorer outcomes, including increased hospitalizations for chronic disease conditions will provide information that MassHealth can utilize on the processes of re-enrollment of patients to ensure continuous coverage and reduction in unnecessary hospitalizations.
4. Our demonstration that women fare worse than men in health care outcomes due to gaps in insurance coverage would provide information to MassHealth on which patients to target for re-enrollment to ensure continuous coverage and improved processes and outcomes of chronic disease management.

Coverage rates after insurance reform have increased in Massachusetts; however, our prior work suggests that insurance instability, specifically among the group of women with MassHealth, has increased. The APCD database with the inclusion of the MassHealth coverage will provide a unique opportunity to understand if improved longitudinal health insurance coverage is associated with greater coordination of chronic disease management, and whether this coordinated care differs by gender.

VIII. PURPOSE AND INTENDED USE

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

Members of the public with chronic disease conditions are the ones who make the decisions about which providers and which health care systems they receive care. Chronic diseases are very common; it is estimated that 50% or more of adult residents in Massachusetts have one of the chronic conditions we are studying. Our project will be of interest and importance to all members of the public with chronic diseases to better understand how to achieve the best health outcomes in managing their chronic conditions. Knowing that stable health insurance coverage and coordination of health care providers results in better processes and outcomes will allow members of the public to make informed choices about their own care.

Knowledge of how stability in health insurance can contribute to better health outcomes is in the public interest as well. This knowledge will aid the public and their elected representatives to advocate for the best processes to support stable health insurance coverage.

When completed, we will have information on gender differences in stability of care for chronic disease management. This information will be of specific interest to women in Massachusetts as they make decisions on how to coordinate their own health providers and health care choices, as well as chronic care management for their family members.

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.

IX. APPLICANT QUALIFICATIONS

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

Karen M. Freund MD, MPH, of the Institute for Clinical Research and Health Policy Studies at Tufts Medical Center has led interventions to reduce and eliminate gender, income, and racial/ ethnic disparities in health care. She served as PI of the National Cancer Institute (NCI) funded Patient Navigation Research Program, to develop and evaluate a patient navigation intervention to reduce health disparities in breast and cervical cancer outcomes. They enrolled over 4000 subjects into the trial, with 55% from underrepresented minorities. Dr. Freund chaired the Design and Analysis Committee which oversees all major outcomes analyses on the 12,000 subjects in the nationwide trial. She, along with Dr. Hanchate, was funded through the NIMHD to conduct an analysis of the impact of Massachusetts (MA) Health Insurance Reform on cancer health disparities, and the methodologies developed for that investigation inform the proposed research. She has collaborated with all the co-investigators of this proposal. She is also a practicing primary care provider who has daily experience with the interface of access and health care insurance stability and health care coordination and fragmentation in her clinical practice. **Nancy Kressin, PhD**, is nationally known for her studies designed to identify the mechanisms for disparities in care. Her research on disparities in invasive cardiac procedure use was one of the first to document that patient beliefs and attitudes were not the source of observed disparities. With NHLBI R01 funding, she documented differences in hypertension process of care (e.g., counseling about blood pressure (BP) and BP medications), medication adherence and outcomes. Her team evaluated different methods for measuring treatment intensification and found that racial differences in BP control were directly related to racial differences in BP treatment intensification, supporting the importance of accounting for processes of care when measuring disparities. Most relevant to the current proposal is Dr. Kressin’s current leadership of a NHLBI funded U01 Center for Health Insurance Reform, Cardiovascular Outcomes, and Disparities, where she, co-investigator Dr. Amresh Hanchate, and others are examining indices regarding the use, and disparities in use, of inpatient hospital care in MA, pre- and post-insurance reform. **Amresh Hanchate, PhD, Co-Investigator**, and health economist, has extensive experience in examining the association between inadequate insurance and low socioeconomic status on racial/ethnic disparities in healthcare utilization and outcomes, risk adjustment methodology using administrative data, provider performance comparison and economic evaluation of health interventions. He is PI of ongoing studies examining a) state discharge data to assess the quality of inpatient care in the Hispanic community (NIMHD R01), and b) the impact of improved risk adjustment on comparison of hospital quality of care measures. Dr. Hanchate is currently PI on a NHLBI funded study examining the effects of MA health reform on access and disparities in cardiovascular care. He has extensive experience in the design and estimation of multilevel statistical models involving merged patient level data with geocoded data. **Amy LeClair, PhD, Co-Investigator**, is a medical sociologist and Senior Research Associate at Tufts Medical Center. She has extensive experience in project management, particularly collaborations involving multiple institutions, and health services research involving vulnerable populations. **Norma Terrin, PhD, Biostatistician**, is Director of the Biostatistics, Epidemiology, and Research Design Center at Tufts Medical Center. She has been funded as PI for her methodological research by NCI, AHRQ, and NSF. Her experience with methods for longitudinal and missing data will be especially applicable. She was either senior statistician or PI on three NCI-funded longitudinal studies, including one with Dr. Freund. She has experience with economic analyses, serving as statistical consultant to the Center for Evaluation of Value and Risk at Tufts Medical Center. **Alejandro Moreno-Koehler, MPH, Biostatistician**, is part of the Biostatistics, Epidemiology, and Research Design Center at Tufts Medical Center and has expertise in data management and statistical and epidemiological methods.

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.)

X. 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) , and 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:

N/A. We are not requesting individual patient level linkage.

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

N/A

- Individual Provider Level Data

What is the purpose of the linkage:

We will link National Provider Identifiers (NPIs) from the APCD to provider-level data. One of our central hypotheses is that fragmented care – care that occurs in multiple health care systems – is associated with poorer outcomes. The only way we can measure fragmented care is by identifying specific providers and their health care system affiliations. For example, if a patient normally sees Dr. A, but then sees Dr. B, and Dr. B is in the same practice as Dr. A, we would not consider that fragmented. The care is still taking place in the same health care system. We will be using provider level data solely for the purposes of creating a variable for “coordinated” or “fragmented” care. We will not be conducting or reporting analyses by individual providers or health care systems.

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

We will use the National Provider Identifier (NPI) registry. This data is owned and maintained by the U.S. Centers for Medicare & Medicaid Services (CMS). We will use NPI to determine providers' names and affiliations.

Individual Facility Level Data

What is the purpose of the linkage:

N/A. We are not requesting individual facility level linkage.

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

N/A

Aggregate Data

What is the purpose of the linkage:

Five (5) digit zip code will be linked with Census data to determine median household income (HHI) and the percentages of different races/ethnicities. This measure will be used as a proxy for socio-economic status and race/ethnicity (which is largely missing in the APCD), both of which are known to be a major social determinants of health.

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

We will use data from the 2010 US Census, publically available through the American Fact Finder website at <http://factfinder.census.gov/>. We will use median household income, % Hispanic or Latino Origin, % White alone, % Black or African American alone, and % Asian alone.

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 be utilizing a deterministic method for each of the linkages

Provider level data: NPI/CMS – We will merge the NPI number in the APCD with NPI registry which represents each health care provider with a unique NPI ID.

Aggregate Data: Census – We will link each 5 digit zip code from the APCD data with a specific median household income, % Hispanic or Latino Origin, % White alone, % Black or African American alone, and % Asian for that zip code.

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

Provider level data:

We will create a separate file where we link the unencrypted NPI to individual providers' names. We will then code each provider with the health care system with which they are affiliated. A code for the system of care for each NPI will be merged back with the APCD file.

Therefore, neither provider name nor practice or health care system name can be associated with patient data. We will not store the NPI registry on the hard drive with the APCD data.

Aggregate Data: Census – Linking with Census data will not add any individual level data to the dataset, as it will only provide aggregate, zip code level data that will be useful for the analysis.

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.

XI. 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 will disseminate our results through peer-reviewed publications in major clinical and/or health policy journals. We will present aggregate findings at major scientific conferences (e.g., Academy Health). In addition, we plan to hold a webinar and conference based on the study findings.

Our publications will represent analysis findings based on aggregate data derived from the APCD. Service utilization will be examined by payer type (such as private payer or Medicaid), but will not be identified at individual payer or provider level. Data will not be identifiable at an individual patient level, as per-patient averages will only be shown if sample sizes are sufficient to mask individual data.

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.

Our results will only be available through peer reviewed publications or presentations. As our research is funded through the NIH, all peer reviewed publications will be available without charge through the PMCID process on pubmed.gov. We will not provide any parties with analyses through any other mechanisms.

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.)?

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

XII. 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:	
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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.

XIII. 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:	Karen Freund
Title	Vice Chair of Medicine
Original Data Request Submission Date:	10/29/15
Dates Data Request Revised:	2/3/16