

**Commonwealth of Massachusetts  
Center for Health Information & Analysis (CHIA)  
Non-Government Agency Application for Data**

*This application 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 and Case Mix 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:	Lisa M. Lines and Arlene Ash
Title:	PhD Candidate (Lines) and Professor and Division Chief (Ash)
Organization:	University of Massachusetts Medical School
Project Title:	Outpatient Emergency Department Utilization: Prevalence, Predictive Models, and Performance Measures
Date of Application:	March 21, 2014
Project Objectives (240 character limit)	To build predictive models of emergency department (ED) use in a large, all-payer database for use in creating performance measures for primary care providers (PCPs).
Project Research Questions (if applicable)	1. What are the characteristics of ED users, compared to those without any ED use, in Massachusetts? 2. What are the predictors of any ED use, number of ED visits, and number of PCS ED visits in Massachusetts, and do these vary by payor/plan characteristics? 3. How do models of ED use vary in their ability to accurately predict any ED use, number of ED visits, and number of PCS ED visits?

Please indicate if you are a Researcher, Payer, Provider, Provider Organization or Other entity and whether you are seeking data pursuant to 957 CMR 5.04 (De-Identified Data), 957 CMR 5.05 (Direct Patient Identifiers for Treatment or Coordination of Care), or 957 CMR 5.06 (Discretionary Release).

<input checked="" type="checkbox"/> Researcher	<input checked="" type="checkbox"/> 957 CMR 5.04 (De-identified Data)
<input type="checkbox"/> Payer	<input type="checkbox"/> 957 CMR 5.05 (Direct Patient Identifiers)
<input type="checkbox"/> Provider / Provider Organization	<input type="checkbox"/> 957 CMR 5.06 (Discretionary Release)
<input type="checkbox"/> Other	

**II. PROJECT SUMMARY**

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

The purpose of this project is to expand our prior work on building emergency department risk

models to an all-payer population. Our current data include approximately 55,000 commercially insured individuals in a managed-care network in Massachusetts, and we hope to replicate that work in a larger dataset that includes Medicaid beneficiaries in order to validate our models.

Creating ED risk models is important because if providers and payors can accurately evaluate the risk of ED use in a population, they can target high-risk patients with educational and care management programs to try to prevent unnecessary future ED visits. This would have a direct impact on public expenditures for ED use. In addition, accurate risk-adjusted predictive models allow administrators to create credible and fair targets for “expected use” for panels of patients against which actual use can be judged.

In this study, we will use the requested CHIA data to validate our prior models predicting any ED use, the number of ED visits, and the number of primary care sensitive (PCS) ED visits in cohorts according to payor (private and Medicaid). We will use medical claims to identify primary diagnosis codes for ED visits, which will be scored according to the New York University Emergency Department algorithm. Primary-care sensitive (PCS) ED visits will consist of visits in 3 subcategories: nonemergent, emergent but primary-care treatable, and emergent but preventable/avoidable. We will then: 1) define and describe the characteristics of ED users; 2) build and validate predictive models for ED outcomes using administrative claims data; and 3) compare the performance of models predicting any ED use, number of ED visits, and number of PCS ED visits.

### III. FILES REQUESTED

Please indicate the databases from which you seek data, the Level(s) and Year(s) of data sought.

ALL PAYER CLAIMS DATABASE	Level 1 <sup>1</sup> or 2 <sup>2</sup>	Single or Multiple Use	Year(s) Of Data Requested Current Yrs. Available 2009 - 2012
<input checked="" type="checkbox"/> Medical Claims	<input type="checkbox"/> Level 1 <input checked="" type="checkbox"/> Level 2	Single	<input checked="" type="checkbox"/> 2009 <input checked="" type="checkbox"/> 2010 <input checked="" type="checkbox"/> 2011 <input checked="" type="checkbox"/> 2012
<input type="checkbox"/> Pharmacy Claims	<input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2		<input type="checkbox"/> 2009 <input type="checkbox"/> 2010 <input type="checkbox"/> 2011 <input type="checkbox"/> 2012
<input type="checkbox"/> Dental Claims	<input type="checkbox"/> Level 2	Select...	
<input checked="" type="checkbox"/> Member Eligibility	<input checked="" type="checkbox"/> Level 2	Single	<input checked="" type="checkbox"/> 2009 <input checked="" type="checkbox"/> 2010 <input checked="" type="checkbox"/> 2011 <input checked="" type="checkbox"/> 2012
<input checked="" type="checkbox"/> Provider	<input checked="" type="checkbox"/> Level 2	Single	
<input type="checkbox"/> Product	<input type="checkbox"/> Level 2	Select...	

CASEMIX	Level 1 - 6	Fiscal Years Requested
<b>Inpatient Discharge</b>	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN)	1998-2012 Available (limited data 1989-1997)

<sup>1</sup> Level 1 Data: De-identified data containing information that does not identify an individual patient and with respect to which there is no reasonable basis to believe the data can be used to identify an individual patient. This data is de-identified using standards and methods required by HIPAA.

<sup>2</sup> Level 2 (and above) Data: Includes those data elements that pose a risk of re-identification of an individual patient.

	<input type="checkbox"/> Level 4 – UHIN and UPN <input type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	
<b>Outpatient Observation</b>	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN) <input type="checkbox"/> Level 4 – UHIN and UPN <input type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	<u>2002-2012 Available</u>
<b>Emergency Department</b>	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN) <input type="checkbox"/> Level 4 – UHIN and UPN; Stated Reason for Visit <input checked="" type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	<u>2000-2012 Available</u>  <u>We request years 2009-2012</u>

**IV. FEE INFORMATION**

Please consult the fee schedules for APCD (Administrative Bulletin 13-11) and Case Mix data (Administrative Bulletin 13-09) and select from the following options:

**APCD Applicants Only**

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

**Case Mix Applicants Only**

- Single Use
- Limited Multiple Use
- Multiple Use

Are you requesting a fee waiver?

- Yes
- No

If yes, please submit a letter stating the basis for your request.

**V. 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.

Please see attached

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

Please indicate here whether you are seeking Medicaid Data:

- Yes  
 No

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

We are requesting some Level 2 Medicaid data for this project, which will provide important information about the characteristics of Medicaid enrollees who use the ED as a site of care. This project will address important policy questions related to access to care for the Medicaid population. The ACA's expansion of the Medicaid program is projected to insure an additional 10-16 million US adults, on top of enrollment growth projected under pre-ACA eligibility thresholds. Many of the program's new enrollees live in disadvantaged communities where provider capacity, particularly in primary care specialties, is strained. Thus, there is a need to understand Medicaid patients' use of the ED and identify ways to reduce unnecessary visits.

**VII. MEDICARE DATA**

Please indicate here whether you are seeking Medicare Data:

- Yes  
 No

Medicare data may only be disseminated to state agencies and/or entities conducting research projects that are directed and partially funded by the state if such research projects would allow for a Privacy Board or an IRB to make the findings listed at 45 CFR 164.512(i)(2)(ii) if the anticipated data recipient were to apply for the data from CMS directly. If you are requesting Medicare data, please explain how your research project is directed and partially funded by the state and describe in detail why your proposed project meets the criteria set forth in 45 CFR 164.512(i)(2)(ii). Applicants must describe how they will use the data and inform CHIA where the data will be housed. CHIA must be informed if the data has been physically moved, transmitted, or disclosed.

Applicants seeking Medicare data must complete a Medicare Request Form.

Applicants approved to receive Medicare data will be required to execute an Addendum to CHIA's standard data use agreement, containing terms and conditions required by CHIA's data use agreement with CMS.

**VIII. DIRECT PATIENT IDENTIFIERS<sup>3</sup>**

State and federal privacy laws may require the consent of Data Subjects prior to the release of any Direct Patient Identifiers. If you are requesting data that includes Direct Patient Identifiers, please provide documentation of patient consent or your basis for asserting that patient consent is not required.

Not applicable

**IX. REQUESTS PURSUANT TO 957 CMR 5.04**

Payers, providers, provider organizations and researchers seeking access to Level 1 (de-identified) data are required to describe how they will use such data for the purposes of lowering total medical expenses, coordinating care, benchmarking, quality analysis or other administrative research purposes. Please provide this information below.

We will use these data to inform models that can be used to create performance measures for primary care providers related to their patients' use of the ED. Primary care quality is closely associated with ED use, and ED use benchmarks have frequently been used by patient-centered medical home (PCMH) demonstrations to measure whether implementing a PCMH can reduce ED use.

**X. 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	N/A	N/A
Pharmacy Claims	N/A	N/A
Dental Claims	N/A	N/A
Membership Eligibility	N/A	N/A
Provider	N/A	N/A
Product	N/A	N/A

**XI. PURPOSE AND INTENDED USE**

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

Obstacles to accessing primary care can lead to unnecessary ED visits, suggesting an underlying

<sup>3</sup> Direct Patient Identifiers. Personal information, such as name, social security number, and date of birth, that uniquely identifies an individual or that can be combined with other readily available information to uniquely identify an individual.

problem that, if mediated, could reduce unnecessary ED use. ED overcrowding degrades care and harms patients. Care in the ED often disrupts coordination among providers, potentially resulting in unnecessary procedures and worse care. Finally, care in the ED is more expensive than care in other settings. Many studies have found that the costs to Medicare, Medicaid, and other third-party payors, as well as patient out-of-pocket costs, are considerably higher for the same services provided in other, less-acute settings. Reducing unnecessary ED use represents an opportunity to save as much as \$38 billion per year, according to the New England Healthcare Institute (2010).

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

*Please see attached.*

3. Has your project received approval from your organization's Institutional Review Board (IRB)?
- 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.

*Note: this protocol is an extension of work for which we received IRB approval in September, 2012.*

## **XII. APPLICANT QUALIFICATIONS**

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

I am a doctoral candidate in the Clinical and Population Health Research program at UMass Medical School. My training has included the following core coursework: epidemiology, research methods, biostatistics, econometrics, determinants of health, research ethics, and survey methods. I have worked on numerous projects involving large datasets, including cancer registry, claims, and public-use survey data (please see my CV for a list of published papers and reports). For the past several years, I have been conducting my dissertation study of emergency department use in a Massachusetts managed-care cohort and a large nationwide sample of commercially insured individuals. I have presented findings from this study at the annual meetings of the American Public Health Association and AcademyHealth. My advisor, Arlene Ash, and I have created and evaluated a new measure of ED use (primary-care sensitive ED use), and we have developed predictive models of ED use that are capable of accurately identifying individuals at high risk of future ED use. Dr. Ash is Professor and Division Chief in the Department of Quantitative Health Sciences, and her CV is attached as well.

2. Attach résumés or curriculum 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.)

*Please see attached*

**XIII. DATA LINKAGE AND FURTHER DATA ABSTRACTION**

1. Does your project require linking the CHIA Data to another dataset?

Yes

No

2. If yes, will the CHIA Data be linked to other patient level data or with aggregate data (e.g. Census data)?

Patient Level Data

Aggregate Data

3. If yes, please identify all linkages proposed and explain the reasons(s) that the linkage is necessary to accomplish the purpose of the project.

[Empty text box for response to question 3]

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

[Empty text box for response to question 4]

**XIV. 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.

This research will be conducted for my dissertation. I plan to ultimately publish several papers related to this project in health services research or health policy journals.

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.

Publications will be available to all subscribers of the journals to which they are accepted. I will not charge a fee for any report or analysis generated from APCD data.

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

N/A
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**XV. 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:	

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

- Yes
- No

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

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

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

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