# Massachusetts Division of Health Care Finance and Policy
# Application for All-Payer Claims Database (APCD) Data

Applications for APCD data must meet the requirements set forth in regulation **114.5 CMR 22.00: Health Care Claims Data Release** and any Administrative Bulletins promulgated under this regulation. The regulation and bulletins are available online at http://www.mass.gov/eohhs/gov/departments/hcf/regulations.html.
Information provided on pages 1-4 of this application will be posted on the internet for public comment.

| A. APPLICANT INFORMATION | |
|---|---|
| Applicant Name: | Dr. Arnold Epstein and Dr Amy Boutwell |
| Title: | John H Foster Professor and Chair of the Department of Healthcare Policy and Management (Epstein) and President of Collaborative Healthcare Strategies (Boutwell) |
| Organization: | Harvard School of Public Health |
| Project Title: | Analysis of the Massachusetts All-Payer Claims Database to Describe the Epidemiology of Readmissions |
| Date of Application: | March 25, 2013 |
| Project Objectives (240 character limit) | To offer providers, payers and policymakers insights into Massachusetts-specific readmission patterns- and thus opportunities for intervention- that are most relevant for cost containment and quality improvement goals for MA payers and citizens. |
| Project Research Questions | 1. What is the total number of readmissions in Massachusetts including all payers and by individual payer?<br>2. What are the top 10 index admission discharge diagnoses (by rate and volume) resulting in 14 day and 30-day readmission by payer?<br>3. What are the top 10 readmission discharge diagnoses (by rate and volume) for 14 and 30- day discharges by payer?<br>4. What is discharge disposition of readmitted patients(e.g. home without formal care, home with home health, SNF or other) by payer and how does likelihood of readmission vary?<br>5. What is the time course of 30-day readmissions for the most common reasons for readmission and what proportion of patients had an ambulatory follow up appointment within that time?<br>a. How does this differ by payer?<br>b. How does this differ for patients with a principal diagnosis of a behavioral health condition?<br>6. How prevalent are high utilizers (> 3 readmissions annually) in population, by payer?<br>a. What proportion of total hospitalizations and readmissions do they account for and how do their most common conditions differ?<br>b. To what extent are claims for high risk medications associated with readmissions among high utilizers? |

## B. DATA REQUESTED

| 1. PUBLIC USE | | | |
|---|---|---|---|
| File | SINGLE USE*<br>'08 – '09 – '10 | REPEATED USE*<br>'08 – '09 – '10 | MULTIPLE USE*<br>'08 – '09 – '10 |
| Medical Claims | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Pharmacy Claims | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Dental Claims | ☐ ☐ ☐ | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Membership Eligibility | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Provider | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Product | ☐ ☐ ☐ | ☐ ☐ ☐ | ☐ ☐ ☐ |

| 2. RESTRICTED USE | | | |
|---|---|---|---|
| File | SINGLE USE*<br>'08 – '09 – '10 | REPEATED USE*<br>'08 – '09 – '10 | MULTIPLE USE*<br>'08 – '09 – '10 |
| Medical Claims | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Pharmacy Claims | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Dental Claims | ☐ ☐ ☐ | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Membership Eligibility | ☐ ☐ X | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Provider | ☐ ☐ ☐ | ☐ ☐ ☐ | ☐ ☐ ☐ |
| Product | ☐ ☐ ☐ | ☐ ☐ ☐ | ☐ ☐ ☐ |

* The Division reserves the right to change proposed "use level" after review of this application.

**Definitions:**

- **Single Use**: Use of the data for a project or study.
- **Repeated Use**: Use of the data as an input to develop a report or product for sale to multiple clients or customers provided that it will NOT disclose APCD data. Examples include: development of a severity index tool, development of a reference tool used to inform multiple consulting engagements where no APCD data is disclosed.
- **Multiple Use**: Use of the data to develop a product or service that will be sold in the marketplace and will disclose APCD data. Examples include: a benchmark report produced by analyzing APCD data, a query tool to ease access to APCD data.

3. **Filters:** If you are requesting data elements from the Restricted Use dataset, 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 products.)

| File | Data Element(s) | Range of Values Requested |
|---|---|---|
| Medical Claims | MC001, MC016, MC018, MC023, MC059, MC060, MC069, MC137 | Age ≥ 18 yrs ; exclude DRGs 370-375 |
| Pharmacy Claims | PC001, PC032, PC107 | Age ≥ 18 yrs |
| Dental Claims | None requested | None requested |
| Membership Eligibility | ME001, ME017, ME046, ME107 | Age ≥ 18 yrs |

| | | |
|---|---|---|
| Provider | None requested | None requested |
| Product | None requested | None requested |

4. **Restricted data elements:** If you are requesting Data Elements from the Restricted Use dataset, list each restricted data element you are requesting on the attached Data Element List and explain why you need access to EACH Restricted Use data element for your project. Limit your request to the minimum data elements necessary to complete the project and be specific as to how each element relates to your proposed model/analytic plan. Add rows to this table as needed.

| **Restricted Data Element Name** | **Restricted Data Element Description** | **Data File** (Medical, Pharmacy, Dental, Eligibility, Provider, Product) | **Justification** (reason this data element is necessary for your project) |
|---|---|---|---|
| ME001 | Payer | Member eligibility | For linking with claims files |
| ME107 | Carrier-Assigned Member Unique ID | Member eligibility | For linking with claims files |
| ME017 | Member ZIP (first 3 digits) | Member eligibility | We intend to use zip as a proxy indicator of socioeconomic status, or geographic proximity to a hospital |
| ME046 | Member PCPID | Member Eligibility | We will look at whether there is a PCP ID indicated; missing values may indicate a lack of establishing PCP which could contribute to readmission |
| MC001 | Payer | Medical Claims | For linking with pharmacy claims and member eligibility files |
| MC137 | Carrier-Assigned Member Unique ID | Medical Claims | For linking with pharmacy claims and member eligibility files |
| MC016 | Member zip code | Medical Claims | We intend to use zip as a proxy indicator of socioeconomic status, or geographic proximity to a hospital |
| MC018 | Admission Date, Month, Year | Medical Claims | We are looking at hospital readmissions, requiring specific dates of admission and discharge to measure |
| MC059 | Date of Service – From | Medical Claims | We are looking at hospital readmissions, requiring specific dates of admission and discharge to measure |
| MC 060 | Date of Service – To | Medical Claims | We are looking at hospital readmissions, requiring specific dates of admission and discharge to measure |
| MC069 | Discharge date, month, | Medical Claims | We are looking at hospital |

| | | | |
|---|---|---|---|
| | year | | readmissions, requiring specific dates of admission and discharge to measure |
| PC001 | Payer | Pharmacy Claims | For linking with medical claims and member eligibility files |
| PC107 | Carrier-Assigned Member Unique ID | Pharmacy Claims | For linking with medical claims and member eligibility files |
| PC016 | Member zip | Pharmacy Claims | We intend to use zip as a proxy indicator of socioeconomic status |
| PC017 | Date Prescription Filled | Pharmacy Claims | We will examine the relationship between prescription fill date(s) and date(s) of readmission |
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## C. PURPOSE AND INTENDED USE

1. Please describe the purpose of your project and how you will use the APCD.

The national focus on readmissions has been primarily informed by analyses of Medicare fee-for-service claims data. A 2008 Medicare Payment Advisory Committee Report to Congress contained an analysis of Medicare FFS readmissions showing that 30-day readmissions for heart failure, acute myocardial infarction and pneumonia were both frequent and potentially preventable (MedPAC June 2008). In 2009, a national readmission epidemiology analysis based on Medicare FFS data found that 20% of Medicare FFS patients were readmitted to the hospital within 30 days and 34% were readmitted within 90 days. The authors estimated that the costs of the 30-day readmissions to the Medicare program were $17 billion in 2007 (Jencks NEJM 2009).

A 2010 analysis of Medicare FFS claims data found that 30-day readmissions among patients discharged to skilled nursing facilities for either short- or long term stays exceeded 25% and that readmission rates for this population increased by 30% from 2000 to 2006 (Grabowski Health Affairs 2010). The costs associated with readmissions from skilled nursing facilities totaled over $4 billion in 2006.

In 2011, CMS committed to making Medicare FFS readmission data available to providers and communities through the "Care Transitions" Aim of the QIO 10$^{th}$ Statement of Work. Over the past 18 months, providers have been able to access, at their request, data regarding readmission patterns at the local level. This new data asset has formed the foundation for hundreds of communities (groups of providers within a geographic region) to more fully review and understand the epidemiology of Medicare readmissions in their localities.

The most significant data asset to analyze all-payer readmission patterns is the Healthcare Cost and Utilization Project (HCUP) of the Agency for Healthcare Research and Quality (AHRQ). HCUP drew upon aggregated data from state inpatient discharge databases for 15 states to produce a 2010 and 2011 statistical brief reporting on Medicaid readmissions (Jiang 2010) and all-payer readmissions (Jiang 2011). These analyses provide the best-available insights into all-payer

readmission epidemiology.

While the HCUP briefs revealed different readmission patterns for non-Medicare and Medicare populations, they used only hospital claims data and could not examine post-acute care or ambulatory follow up. Their analyses focused on general conditions (eg "circulatory disorders" or "respiratory disorders") and did not provide information with sufficient granularity for policymakers working on programs for individuals with specific conditions. Of course, the data were aggregated from 15 states and thus are not clearly generalizable to Massachusetts, which has a unique population and delivery system and many fewer uninsured patients.

Our analyses will address these large gaps. Our overall objective is to describe the epidemiology of readmissions in Massachusetts. While much is known about patterns of care for Medicare patients, much less is known about care for the non-Medicare population.

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

Readmissions are frequent and costly, and are a focus of attention for payers and policymakers to reduce avoidable healthcare costs. According to 2008 data, Massachusetts ranks 41st out of 50 on 30-day readmission rates for Medicare beneficiaries. Over the past 4 years, an unprecedented mobilization of provider-based initiatives to address rehospitalizations has emerged in Massachusetts, led by the STAAR Initiative (State Action on Avoidable Rehospitalizations), the INTERACT project (Interventions to Reduce Acute Care Transfers), and the Massachusetts Care Transitions Forum (which convenes health care stakeholders actively engaged in improving transitions in care). These efforts reflect the engagement of the provider community in Massachusetts toward a common aim to reduce costs through improving care transitions and reducing readmissions.

In large part, this mobilization of efforts to reduce readmissions has been stimulated by Medicare payment policy: Section 3025 of the Affordable Care Act outlined rapidly escalating payment penalties for hospitals with higher than expected all cause 30 day readmission rates for AMI, HF and pneumonia. As a high-readmission state, Massachusetts has one of the highest proportions of hospitals receiving "readmission penalties" in the US. As a consequence, many hospitals have focused their efforts on improving readmission rates for Medicare FFS beneficiaries.

Improving care for Medicare beneficiaries is important. However, it is unknown whether strategies to improve readmission rates for Medicare beneficiaries can be expected to accrue benefit for non-Medicare patients who comprise the substantial majority of hospitalized patients. Non-Medicare patients who are at high risk for readmission may differ greatly from the Medicare population. Analysis of high-risk patients broadly- without regard to payer status – may disclose opportunities for improvement that become apparent only with use of all payer claims data.

Analysis of the Massachusetts All Payer Claims Dataset (APCD) offers providers, payers and policymakers an opportunity to understand readmission patterns - and thus opportunities for intervention - that are most relevant for cost containment and quality improvement goals for Massachusetts payers and the citizens of the Commonwealth. Moreover, this analysis will serve as prototype analysis for the use of all-payer claims data across the country.

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

4. 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
   - X No, the IRB will review the project on _____TBD; application is in process_____
   - ☐ No, this project is not subject to IRB review
   - ☐ No, my organization does not have an IRB

## D. APPLICANT QUALIFICATIONS

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

Dr. Arnold Epstein is the John H Foster Professor and Chair of the Department of Healthcare Policy and Management at the Harvard School of Public Health. Dr. Epstein has long experience analyzing administrative data including Medicare claims. He has completed literally scores of studies using these data to examine patterns of utilization, quality of care and costs. In prior work Dr. Epstein has focused on readmissions as an indicator of quality, the geographic variation in rates of readmission and the regional predictors of readmissions including discharge planning, supply side factors such as the number of primary care physicians, and the overall admission rate. Thus Dr. Epstein brings great substantive knowledge of readmissions and the related clinical and policy issues. Even more broadly, Dr. Epstein brings nationally recognized policy expertise to bear on framing this investigation to ensure maximal policy relevance to payers, policymakers and other state and national stakeholders.

Dr. Amy Boutwell brings nationally recognized content expertise to the topic of readmissions, including in-depth contextual knowledge of the myriad efforts across settings and sectors in Massachusetts to implement strategies to improve care transitions and reduce readmissions. Dr. Boutwell co-designed the Institute for Healthcare Improvement's STAAR (State Action on Avoidable Rehospitalizations) Initiative–the first large-scale readmission reduction quality improvement initiative. In 2011, Dr. Boutwell founded Collaborative Healthcare Strategies to support local, regional, and national readmission reduction efforts. She is an advisor to the major national readmission programs of technical assistance, including the CMS QIO Care Transitions Aim, and the CMS Hospital Engagement Networks. Dr. Boutwell is the co-principal investigator of an AHRQ-funded study to examine Medicaid readmissions.

Jie Zheng, PhD. will serve as the programmer analyst for this study. Jie Zheng has worked for Dr. Epstein for more than 10 years and has completed scores of studies using administrative data including Medicare claims. She has worked on prior analytic efforts related to readmissions and so understands the nuances in defining index hospitalizations and potential predictors. The All Patient Claims Data have not been made available before so having someone of Dr. Zhang's level of expertise will be a strong asset to the project.

2. Describe the software you plan to use to analyze the data and the experience that the applicant's team members have in using that software.

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| We will use STATA and SAS software to analyze the data. Dr. Zheng has a decade of extensive experience analyzing large databases with this software and has worked on numerous projects requiring similar analytics using single payer data previously. |

3. 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.)

   CVs of Drs Epstein, Boutwell and Zheng are attached.

## E. DATA LINKAGE AND FURTHER DATA ABSTRACTION

1. Does your project require linking the APCD to another dataset?
   YES ☐ NO x

2. If yes, will the APCD 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.

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

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## F. RE-RELEASE OF DATA

Applicants must obtain prior approval from the Division to publish reports that use APCD files. Applicants must provide the Division with a copy of any report at least 30 days prior to release to outside parties, including peer review and prepublication analysis by anyone other than the individuals named in this Application. The Division will review the report to ensure that the publication will not permit identification of an individual patient or permit identification of a specific payment by individual

payer. The Division may prohibit release of reports that may permit identification of individual patients or specific payment by individual payer.

1. Describe your plans to publish or otherwise disclose any APCD data elements, or any data derived or extracted from such data, in any paper, report, website, statistical tabulation, or similar document.

The intended audiences for the project include payers, policymakers, public and private sector healthcare leaders and healthcare providers in Massachusetts. In addition, we anticipate our use and analysis of the APCD will be of interest to stakeholders in other states as well as national-level stakeholders, including leaders of the HHS Partnership for Patients.

Our principal dissemination product will be a peer-review publication. This will facilitate the broadest dissemination of this analysis, including to national stakeholders. In addition, we anticipate identifying and accessing numerous opportunities to present our findings at the state and national level. Dr. Boutwell is an advisor to the two major CMS-funded readmission reduction efforts nationally: the QIO Care Transitions Aim of the 10th Statement of Work, and the CMS Hospital Engagement Networks. In this capacity, Dr. Boutwell has ready access to discuss, engage and present these findings to stakeholders through state-based and national forums. Of note, the CMS Partnership for Patients is specifically an all-payer initiative, and thus this all-payer, state wide analysis will likely be of great interest to this team. In addition, the leaders of other major quality improvement initiatives aimed at large-scale cost and quality goals, such as the Beacon Communities of the Office of the National Coordinator (ONC) and the Robert Wood Johnson Foundation's Aligning Forces for Quality initiative among others, would be highly likely to be interested in this work and to disseminate our findings to their constituencies.

Within Massachusetts, the results of this project will be presented to the Massachusetts Care Transitions Forum (CTF), a broad coalition of stakeholders actively engaged in efforts to improve care transitions and reduce readmissions. There are over 200 participants in the MA CTF, including a large number of individual providers, thought leaders, researchers, HIT developers, and provider organizations (hospitals, home health agencies, SNFs, etc). In addition, there will be numerous opportunities to identify high-leverage opportunities to disseminate our findings to stakeholders within Massachusetts, including the use of listservs, existing conferences, webinars and other communication vehicles.

1. Will the results of your analysis be publicly available to any interested party? Will you charge a fee for the reports or analysis? Please describe how an interested party will obtain your analysis and, if applicable, the amount of the fee.

The results of our analysis will be available publicly in the form of publications in journals or at conferences and meetings.

2. Will you use the data for consulting purposes?
   YES ☐ NO X

3. Will you be selling standard report products using the data?
   YES ☐ NO X

4. Will you be selling a software product using the data?
   YES ☐ NO X

5. If you have answered "yes" to questions 3, 4 or 5, please (i) describe the types of products, services or studies; (ii) estimate the number and types of clients for which the data will be used and (iii) describe any rerelease of data by your clients.

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## G. USE OF AGENTS OR CONTRACTORS

Third-Party Vendors. Provide the following information for all agents and contractors who will work with the APCD data. NONE

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|---|---|
| Company Name: | |
| Contact Person: | |
| Title: | |
| Address: | |
| Telephone Number: | |
| Fax Number: | |
| E-mail Address: | |
| Organization Website: | |

1. 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 ☐

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

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

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

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