

Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Governmental Application for Case Mix 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 schedule 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:	Benjamin E. A. Rogers
Title:	Lead Data Analyst
Organization:	Baystate Health
Project Title:	Strategic Planning and Business Development Analytics with CHIA De-identified Inpatient and Outpatient ED & Observation Data
Mailing Address:	280 Chestnut St. Springfield MA, 01199
Telephone Number:	413-794-7704
Email Address:	Benjamin.rogers@baystatehealth.org
Names of Co-Investigators:	Jean Ahn, MHA - VP Strategic Planning and Business Development Samantha Kennedy, MBA - Planning Consultant Benjamin Rogers, MPH - Lead Data Analyst Laurel Smith, MPA - Manager Special Projects Jason McClarran - Data Analyst
Email Addresses of Co-Investigators:	jean.ahn@baystatehealth.org laurel.smith@baystatehealth.org samantha.kennedy@baystatehealth.org jason.mcclarran@baystatehealth.org
Original Data Request Submission Date:	06/05/2015
Dates Data Request Revised:	
Project Objectives (240 character limit)	To provide expert qualitative and quantitative analysis to drive and support population health transformation across Baystate Health and the communities we serve; to enhance both patient experience and population health while decreasing cost.
Project Research Questions (if applicable)	<ol style="list-style-type: none"> 1. Identify current and historic community health care needs and potential future demands. 2. Understand chronic conditions, health care usage and acuity to support appropriate levels of care across our regional system and community hospitals. 3. Identify areas for quality and access improvement. 4. Better understand inter-facility patient recidivism for increased identification of possible quality and access issues. 5. Understand utilization trends in order to properly adjust and

	allocate resources and ultimately to enhance and support patient experience and population health while decreasing costs.
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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.

One main purpose of our department is to provide rigorous strategic planning and developmental analytics to Baystate Health through comprehensive market analyses, to meet the needs of our communities and the population we serve in a cost-effective manner. Our mission is ongoing and is not defined by one singular project. The CHIA inpatient and outpatient ED databases have been integral to our purpose in allowing us to better understand the demands in the Western Massachusetts communities and in the state as a whole. These data have helped us in assessing the needs of the community and proactively taking measures to better serve our population with more targeted, more efficiently integrated and higher quality service. Having the ability to filter up from patient level data (e.g. age, sex, zip) to population level data allows us to be more targeted, thorough and specific in our population health statistics and usage metrics/measures.

III. FILES REQUESTED

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

CASE MIX	Levels 1 – 6	Fiscal Years Requested
Inpatient Discharge	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input checked="" 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>PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:</u> We utilize the UHIN to develop a patient journey that includes all interactions with health care services. This allows us to analyze patient readmissions as a quality metric. This is extremely useful to look across the hospitals since recidivism may not take place at the primary facility.	<u>1998 – 2013 Available</u> (limited data 1989-1997) Level 3 FY2010 FY2011 FY2012 FY 2014
Outpatient Observation	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input checked="" 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>PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:</u> We utilize the UHIN to develop a patient journey that includes all interactions with health care services. This allows us to analyze patient readmissions as a quality metric. This is extremely useful to look across the hospitals since recidivism may not take place at the primary facility.	<u>2002 – 2013 Available</u> Level 3 FY2010 FY2011 FY2012 FY2013 FY2014
Emergency Department	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input type="checkbox"/> Level 2 – Unique Physician Number (UPN)	<u>2000 – 2013 Available</u>

	<input checked="" 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>PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:</u> We utilize the UHIN to develop a patient journey that includes all interactions with health care services. This allows us to analyze patient readmissions as a quality metric. This is extremely useful to look across the hospitals since recidivism may not take place at the primary facility.	Level 3 FY2010 FY2011 FY2012 FY2014
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IV. FEE INFORMATION

Please consult the fee schedules for Case Mix data, available at http://chiamass.gov/regulations/#957_5, and select from the following options:

- 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. 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.

V. REQUESTS PURSUANT TO 957 CMR 5.04 (Researchers, Payers, Providers, and Provider Organizations)

Please complete only if you are requesting Level 1 (de-identified) Case Mix.

Please describe how you will use such data for the purposes of lowering total medical expenses, coordinating care, benchmarking, quality analysis or other administrative research purposes.

Not Applicable

VI. ALL OTHER REQUESTS - PURPOSE AND INTENDED USE

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

The communities and populations that we serve depend upon Baystate Health for high-quality, high-value care. We are better able to provide that high-quality, high-value care by using evidence-based and/or data-supported approaches. Using a multitude of analyses our team can help assess multiple factors such as: current/future health care needs specific to our communities; quality and efficiency metrics for our regional system; identification of areas where system realignment would better serve our community; problem areas for targeting; etc. Our analyses are geared towards making our system better at serving our patients through the continued enhancement of the high-quality, high-value care that Baystate Health is known for, both now and in the future.

Coordination of care, quality analysis and administrative research can lead formatively to lowering

medical expenses. As a not-for-profit health provider, Baystate Health prides itself on being a high-quality, high-value¹ academic health care system. Our department supports this mission by utilizing data, such as the CHIA inpatient and ED mixed cases databases, to gain a detailed and comprehensive understanding of the communities and the health care market. As an academic medical center with three unique community hospitals, the regionalization and coordination of care is paramount. With CHIA's inpatient/ED data, we research ways to better serve our unique populations such as those of our community hospitals. For example, using patient level DRG/ICD9dx/ops codes and zip codes we can identify patterns of patients circumnavigating our community hospitals and driving into our academic medical center. By providing an appropriate level of services at our community hospitals, we can better serve our rural patients closer to home and generally at lower cost. Using the unique patient identifier, another area of focus is better understanding patient recidivism in our environment. Without system-wide, patient level data that would be impossible. With CHIA data we can highlight possible quality issues as well as uncover hidden problem areas that may otherwise have been missed. Administratively, we use CHIA's data to assess our region as a whole. From there we perform ongoing needs assessments combined with other growth and extrapolative metrics to predict what the different populations will require in future years, particularly in a value-based environment. These data are utilized in preparation of proposals for the future functions of Baystate Health.

Center for Health Information and Analysis (CHIA). Massachusetts Hospital Profiles: Data Through Fiscal Year 2012. 2014. <http://www.mass.gov/chia/docs/r/hospital-profiles/2012/massachusetts-hospital-profiles-report-fy12.pdf>. Accessed 09 September 2014.

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. (**Attached Human Subjects Determination**)
 - No, my organization does not have an IRB.

VII. APPLICANT QUALIFICATIONS

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

For the last 2 years I have been the functioning lead data analyst for our team focused on rigorous qualitative and quantitative analytics. Prior to joining Baystate Health I was in a three year Global Family & Child Health Masters of Public Health program. During my masters program, I trained in both epidemiology and biostatistics and conducted graduate level meta-analyses. For both epidemiology and biostatistics I utilized data management programs such as Microsoft Access or directly analyzed the data with both STATA and SAS. These skills have allowed me to help develop the health care data analytics arm of Baystate Health's department of Strategic Planning and Business Development.

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.)

VIII. 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) , 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:

DOES NOT APPLY

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

DOES NOT APPLY

Individual Provider Level Data

What is the purpose of the linkage:

DOES NOT APPLY

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

DOES NOT APPLY

Individual Facility Level Data

What is the purpose of the linkage:

DOES NOT APPLY

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

DOES NOT APPLY

Aggregate Data

What is the purpose of the linkage:

The purpose of linking to these databases is so that we can aggregate data using specific, preset zip code, DRG, ICD9, etc. definitions that allow us to see the specific trends/information at a higher aggregated level than at the individual patient level; it is about variable grouping.

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

We will link the CHIA database in Access to the following which are all internal owned by our dept;

1. Zip Code Lookup Database: This database contains all of the counties and towns of Massachusetts by zip code and aggregates them into pre-defined service areas.
2. DRG Lookup database: This database contains all of the antiquated and up-to-date DRG codes and their corresponding descriptions. The DRGs are aggregated into our system's service line
3. ICD-9 and ICD-10 lookup databases: These databases contain the ICD codes by iteration and description. They consist of both the procedure codes and the diagnosis codes.
4. Age Grouper Database: This database contains the numbers 0-120 and pre-aggregates the ages into set buckets.
5. All other databases are the lookup files that are provided by CHIA to decode such things as payor, payor source, disposition, patient source, hospitals, etc.

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 that algorithm will link each dataset.

All of the linkages will be made inside the single, master, access file that will also be encrypted. The only linkage external to the master database will be to a master excel file to upload queries from the access file. Again, all queries are at an aggregated level.

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

The access file that will house the raw CHIA data will be encrypted and stored on an encrypted C-drive. The security of the PC and networks are described in the INFOSEC section of this application. All queries are done at an aggregate level. Therefore, no patient level data is linked outside the the encrypted, master access file. Additionally, access to the raw data will be limited to only two personnel, the data analysts, who have had both HIPAA and INFOSEC training.

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.

All linked databases are CHIA-provided lookup files or publicly available zip code files.

IX. 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.

Data from our department are considered confidential, marked as such, and are used for internal Baystate Health purposes only. Data in the form of high level bar charts, pie charts or tables may be presented (via PowerPoint) on a larger scale in the system and made available in a flat form (pdf). No data in our office is ever presented at the patient level. We are interested in public and community health and therefore do not report out or make available data at the patient level.

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.

No. Our data is not made publicly available.

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.)?

DOES NOT APPLY

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

DOES NOT APPLY

X. 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:	DOES NOT APPLY
Contact Person:	DOES NOT APPLY
Title:	DOES NOT APPLY
Address:	DOES NOT APPLY
Telephone Number:	DOES NOT APPLY
E-mail Address:	DOES NOT APPLY
Organization Website:	DOES NOT APPLY

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.

DOES NOT APPLY

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

DOES NOT APPLY

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

DOES NOT APPLY


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.

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 practices to protect CHIA data in a manner consistent with the requirements of the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Data Recipients must promptly notify CHIA of any unauthorized use or disclosure of CHIA data.

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:	Benjamin E. A. Rogers, MPH – Lead Data Analyst
Original Application Submission Date:	
Dates Application Revised:	