Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Governmental Application for Case Mix Data

This form is required by all Applicants, except Government Agencies as defined in 957 CMR 5.02. All Applicants must also complete the Data Management Plan, attached to this Application. The Application and the Data Management Plan must be signed by an authorized signatory of the organization. This Application and the Data Management Plan will be used by CHIA to determine if your organization may receive CHIA data. Please be sure the documents are completed fully and accurately. You may wish to consult the Evaluation Guide that CHIA will use to review your documents. Prior to receiving CHIA Data, the organization must execute the Data Use Agreement. You may wish to review that document as you complete these forms.

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.

All attachments must be uploaded to IRBNet with your Application. All applications documents can be found on the CHIA website in Word and/or PDF format.

I. GENERAL INFORMATION

APPLICANT INFORMATION	
Applicant Name:	Jason S. McClarran
Title:	Data Analyst
Organization:	Baystate Helath
Project Title:	Strategic Planning and Business Development Analytics with CHIA De-identified Inpatient, Outpatient ED, and Observation Data
IRBNet ID:	918592-1
Mailing Address:	280 Chestnut Street, 6th Floor (SP&BD) Springfield MA, 01199
Telephone Number:	413-794-7742; 413-794-7704
Email Address:	Jason.McClarran@baystatehealth.org
Names of Co-Investigators:	Jean Ahn, MHA - VP Strategic Planning & Business Development Samantha Kennedy, MBA – Program Planning Manager
Email Addresses of Co-Investigators:	jean.ahn@baystatehealth.org samantha.kennedy@baystatehealth.org
Original Data Request Submission Date:	06/05/2015
Dates Data Request Revised:	
Project Objectives (240 character limit):	To provide informed 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) Business Use Case(s):	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.

II. PUBLIC INTEREST & PROJECT SUMMARY

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

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, outpatient ED, and observation 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, gender, zip) to population level data allows us to be more targeted, thorough and specific in our population health statistics and usage metrics/measures.

2. Has an Institutional Review Board (IRB) reviewed your project?
   ☐ Yes, a copy of the approval letter and protocol must be **attached** to this Application
   ☒ No, this project is not human subject research and does not require IRB review.

3. If your project has not been reviewed by an IRB, please **attach** a brief (1-2 page) description of your project including the methodology, objectives, and research questions.

III. DATA FILES REQUESTED [*Applicants seeking 2015 data only should skip to Question 2*]

1. *FY 2004 – 2014 Data*: Please indicate the Case Mix files from which you seek data, the Level(s), the year(s) of data requested, and your justification for requesting *each* file. Please refer to the Case Mix Data Specifications for details of the file contents.

CASE MIX FILES	Levels 1 – 6	Years Available 2004 - 2014
Inpatient Discharge	☐Level 1 – 3 Digit Zip Code ☐Level 2 – Unique Physician Number (UPN) + 5 Digit Zip Code ☐Level 3 – Unique Health Information Number (UHIN) ☐Level 4 – UHIN and UPN ☐Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	**Year(s) of Data Requested:**
Outpatient	☐Level 1 – 3 Digit Zip Code	**Year(s) of Data Requested:**

Observation	☐Level 2 – Unique Physician Number (UPN) ☐Level 3 – Unique Health Information Number (UHIN) ☐Level 4 – UHIN and UPN ☐Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	
Emergency Department	☐Level 1 – 3 Digit Zip Code ☐Level 2 – Unique Physician Number (UPN) ☐Level 3 – Unique Health Information Number (UHIN) ☐Level 4 – UHIN and UPN ☐Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	**Year(s) of Data Requested:**

2. _FY 2015 Data_: Beginning _with ficsal year 2015, Massachusetts Acute Care Hospital and Case Mix and Charge Data (collectively Case Mix Data) are released in **Limited Data Set (LDS) files**._ Please refer to the Case Mix Data Specifications for details of the file contents.

Please indicate the Case Mix files from which you seek data, the year(s) of data requested, and your justification for requesting _each_ file.

CASE MIX LIMITED DATA SET FILES	Year(s) Of Data Requested Current Yrs. Available ☒ 2015
☒ **Inpatient Discharge**	**Please describe how your research objectives require Inpatient Discharge data:** As noted above, the inpatient data will be utilized to understand our patient populations' health care utilization, acuities, needs, and trends to better support appropriate levels of care (including inpatient services) across our regional system and community hospitals in a high-value, high-quality manner.
☒ **Outpatient Observation**	**Please describe how your research objectives require Outpatient Observation data:** Similarly, the observation data will be utilized to understand our patient populations' health care utilization, acuities, needs, and trends to better support appropriate levels of care (including observation services) across our regional system and community hospitals in a high-value, high-quality manner.
☒ **Emergency Department**	**Please describe how your research objectives require Emergency Department data:** Similarly, the ED data will be utilized to understand our patient populations' health care utilization, acuities, needs, and trends to better support appropriate care in the appropriate settings (including ED services) across our regional system and community hospitals in a high-

value, high-quality manner.

Sections IV-IX must be completed by all Applicants requesting 2015 data. Applications that only include requests for prior years of data can skip to Section X.

IV. GEOGRAPHIC DETAIL
Please choose *one* of the following geographic options for MA residents:

☐ 3 Digit Zip Code (Standard)	☐ 3 Digit Zip Code & City/Municipality ***	☒ 5 Digit Zip Code ***	☐ 5 Digit Zip Code & City/Municipality ***

***Please provide justification for the chosen level of geographic detail if requesting something other than 3-Digit Zip Code only. Refer to specifics in your methodology:

5-Digit zip codes are necessary for more accurate analysis of our patient populations' health care needs and utilization. 3-Digit zip codes limit insights to a much larger area that is impractical for targeting and addressing population and public health issues in communities.   For example, if we wanted to understand inpatient and ED utilization of our health center patients in Springfield, with a 3-digit zip, we could only see at an aggregate level, versus being able to drill down to specific zip codes in metro Springfield.

V. DEMOGRAPHIC DETAIL
Please choose *one* of the following demographic options:

☐ Not Requested (Standard)	☒ Race & Ethnicity***

*** If requested please, provide justification for requesting Race and Ethnicity. Refer to specifics in your methodology:
Race and ethnicity data are necessary to target, understand, and address areas of healthcare disparities in our patient populations.   For example, what are the numbers and percentages of African American women in our communities being treated for certain conditions (and at what stage), versus the population as a whole? Are there indicators that more and/or earlier screenings need to be conducted for this population?

VI. DATE DETAIL
Please choose *one* option from the following options for dates:

☐ Year (YYYY)(Standard)	☒ Month (YYYYMM) ***	☒ Day (YYYYMMDD)***

***Please provide justification for the chosen level of date detail if requesting Month or Day. Refer to specifics in your methodology:

With value-based care, we need to have a better understanding of why patients come into the hospital, for how long, and if they are re-admitted. Without LOS and date information, we are unable to discern these details, particularly if they are low-acuity preventable admissions (or re-admissions).

VII. PHYSICIAN IDENTIFICATION NUMBERS (UPN)
Please choose *one* of the following options for Provider Identifier(s):

☐ Not Requested (Standard)	☐ Hashed ID ***	☒ Board of Registration in Medicine # (BORIM) ***

 ***If requested please, provide justification for requesting Hashed ID or BORIM #. Refer to specifics in your methodology:

With value-based care, we need to have a better understanding of why patients come into the hospital, for how long, if they are re-admitted, and who cared for them. Without physician data, the data become less actionable in terms of implementing or sharing best practices.   For example, if two physicians at the same hospital care for roughly similar patient populations, and one has high-value outcomes (e.g., lower LOS, lower readmissions, etc.), we may want to investigate to see if there are best practices that could be shared across other areas.

VIII. HASHED UNIQUE HEALTH IDENTIFICATION NUMBER (UHIN)
Please choose *one* of the following:

☐ Not Requested (Standard)	☒ UHIN Requested ***
*** If requested please, provide justification for requesting UHIN. Refer to specifics in your methodology: 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 original/primary facility.	

IX. HASHED MOTHER'S SOCIAL SECURITY NUMBER
Please choose *one* of the following:

☒ Not Requested (Standard)	☐ Hashed Mother's SSN Requested ***
*** If requested please, provide justification for requesting Hashed Mother's SSN. Refer to specifics in your methodology: 	

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, please indicate below the types of database to which CHIA Data be linked. [Check all that apply]
   ☐ Individual Patient Level Data (e.g. disease registries, death data)
   ☐ Individual Provider Level Data (e.g., American Medical Association Physician Masterfile)
   ☐ Individual Facility Level Data level (e.g., American Hospital Association data)
   ☐ Aggregate Data (e.g., Census data)
   ☒ Other (please describe):

3. If yes, describe the data base(s) to which the CHIA Data will be linked, which CHIA data elements will be linked; and the purpose for the linkage(s):

We will link the CHIA database in Access to the following which are all internally owned by our department:

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 Databse: this database contains all of the antiquated and up-to-date DRG codes and their corresponding descriptions.   These DRGs are aggregated into our system's service lines.
3. ICD-9 and ICD-10 Lookup Databases: these databases contain the ICD codes and descriptions. The consist of both the procedure and 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: consist of lookup files that are provided by CHIA to decode items such as payor, payor source, disposition, patient source, hospital, etc.

4. 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.

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.

5. 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 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 are linked outside the encrypted, master Access file. Additionally, access to the raw data will be limited to only the data analysts, who have had both HIPAA and INFOSEC training.

XI. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from such CHIA Data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting. All publication of CHIA Data must comply with CHIA's cell size suppression policy, as set forth in the Data Use Agreement. Please explain how you will ensure that any publications will not display a cell less than 11, and no percentages or other mathematical fomulas will be used if they result in the display of a cell less than 11.

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 are ever presented at the patient level. We are interested in population, public, and community health, and therefore do not report out or make available data at the patient level.

2. Do you anticipate that the results of your analysis will be published and/or publically available to any interested party? Please describe how an interested party will obtain your analysis and, if applicable, the amount of the fee, that the third party must pay.

> No, we do not anticipate that the data will be made publicly available.

3. Will you use CHIA Data for consulting purposes?
☐ Yes
☒ No

4. Will you be selling standard report products using CHIA Data?
☐ Yes
☒ No

5. Will you be selling a software product using CHIA Data?
☐ Yes
☒ No

6. Will you be reselling CHIA Data in any format?
☐ Yes
☒ No

If yes, in what format will you be reselling CHIA Data (e.g., as a standalone product, incorporated with a software product, with a subscription, etc.)?

> Not applicable.

7. If you have answered "yes" to questions 4, 5 or 6, please describe the types of products, services or studies.

> Not applicable.

8. If you have answered "yes" to questions 4, 5, or 6, what is the fee you will charge for such products, services or studies?

XII.   APPLICANT QUALIFICATIONS

1. Describe your qualifications (and the qualifications of your co-investigators) to perform the research described.

For the past two years, I have been a key data analyst for our team responsible for rigorous qualitative and quantitative analytics. Prior to joining Baystate Health, I performed data analysis at both the Cigna and Aetna insurance companies. The Excel and Access skills learned from these previous positions have been key in helping to further 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, and co-investigators.   (These attachments will not be posted on the internet.)

XIII.   USE OF AGENTS AND/OR CONTRACTORS

Please note: by signing this Application, the Organization assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to 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**	

1. Will the agent have access to the CHIA Data at a location other than your location, your off-site server and/or your database?
    ☐ Yes, a separate Data Management Plan must be completed by each agent who will store CHIA Data
    ☐ No

2. Describe the tasks and products assigned to this agent for this project; their qualifications for completing the tasks; and the Organization's oversight of the agent, including how the Organization will ensure the security of the CHIA Data to which the agent has access.

XIV. FEE INFORMATION

Please consult the fee schedules for Case Mix Data and select from the following options:

☐ Single Use
☒ Limited Multiple Use
☐ 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.

By submitting this Application, the Data Applicant attests that it is aware of its data use, privacy and security obligations imposed by state and federal law *and* is compliant with such use, privacy and security standards. The Data Applicant further agrees and understands that it is solely responsible for any breaches or unauthorized access, disclosure or use of any CHIA Data provided in connection with an approved Application, including, but not limited to, any breach or unauthorized access, disclosure or use by its agents.

Applicants requesting data from CHIA will be provided with data following the execution of a Data Use Agreement that requires the Data Applicant to adhere to processes and procedures aimed at preventing unauthorized access, disclosure or use of data.

By my signature below, I attest to: (1) the accuracy of the information provided herein; (2) that the requested data is the minimum necessary to accomplish the purposes described herein; (3) the Data Applicant will meet the data privacy and security requirements describe in this Application and supporting documents, and will ensure that any third party with access to the data meets the data use, privacy and security requirements; and (4) my authority to bind the organization seeking CHIA Data for the purposes described herein.

Signature: (Authorized Agent)	
Printed Name :	JEAN AHN
Title:	VP
Applicant's Signature:	
Name:	Jason S. McClarran
Title:	Data Analyst
Original Data Request Submission Date:	6/24/2016
Dates Data Request Revised:	

Attachments. Please indicate below which documents have been attached to the Application and uploaded to IRBNet:
☐ 1. IRB approval letter or summary of project (if applicable)
☒ 2. Resumes of Applicant and co-investigators
☒ 3. Data Management Plan (for each institution that will store CHIA Data)

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