Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Government Application for MA APCD Limited Data Set

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. This application should be completed by the Primary Investigator, and must be signed by a party with authority to bind the organization seeking CHIA Data for the purposes described herein.

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.

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: (Primary Investigator)	Denny Brennan
Title:	Executive Director
Organization:	Massachusetts Health Data Consortium
Project Title:	Spotlight Analytics (apcd 2015)
Mailing Address:	460 Totten Pond Rd, Ste 690, Waltham MA 02451
Telephone Number:	(781) 419-7807
Email Address:	dbrennan@Mahealthdata.org
Names of Co-Investigators:	Brian Kelley
Email Addresses of Co-Investigators:	bkelley@mahealthdata.org
Original Data Applicant Submission Date:	August 22, 2016
Dates Data Application Revised:	
Project Objectives (240 character limit):	To produce and deliver APCD-based analyses and aggregated data to inform providers' and health plans' efforts to reduce cost and improve quality and access while preserving patient privacy. (adding 2015 data to previous years)
Project Research Questions (if applicable) or Business Use Case(s):	1. Total Cost (unit cost and utilization) 2. Quality and Safety 3. Disease prevalence 4. Population risk stratification

	Please see "*MHDC's APCD Application Overview: Providing Secure and Compliant Use Cases*" included with IRBnet submission

II. PUBLIC INTERST & PROJECT SUMMARY

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

To serve the public interest by
- Providing the Commonwealth's providers and payers with aggregated claims data and analyses to improve health care cost, utilization, access and quality
- Enabling the Commonwealth's providers and payers to predict the relative risk of high cost and adverse health outcomes to supsport population health management initiatives
- By identifying sources of variation in the cost of care, providers and plans can manage clinical resource utilization and refer patients to providers delivering high-value services.
- By better understanding sources of variation in outcomes, payers and providers can improve patient outcomes, better coordinate care and inform pay-for-performance strategies.
- By better understanding the incidence and variation of disease across geography and patient demographics, health care organizations can allocate clinical and financial resources to populations with the greatest needs and improve population health
- By better understanding inpatient and outpatient market share, healthcare organizations can better target services to under-served geographic areas and patient populations.
- By better understanding the risks of populations and patient cohorts, healthcare organizations can guide population health management efforts and provide more proactive focused care to the highest risk patients to improve outcomes and reduce unnecessary utilization and costs.
- By providing the value of claims analyses without access to the source CHIA data and by complying with the small cell suppression requirement and ensuring patient privacy

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.

- SEE EXHIBIT A, Attached separately

III. DATA FILES REQUESTED

1. Please indicate the MA APCD databases from which you seek data, the year(s) of data requested, and your justification for requesting *each* file. Please refer to the MA APCD Release 5.0 Data Specifications for details of the file contents.

MA ALL-PAYER CLAIMS DATABASE FILES	Year(s) Of Data Requested Current Yrs. Available ☒ 2011 ☒ 2012 ☒ 2013 ☒ 2014 ☒ 2015
☒ **Medical Claims**	**Please describe how your research objectives require Medical Claims data:** Medical and Pharmacy Claims Files are essential to identifying the specific services and paid dates, paid amounts, admission types, and diagnoses and procedures. These data inform analyses of cost and utilization of health services and drugs by patient, provider, and product classifications, among others. Medical and Pharmacy claims populate the treatment cohort and the encounter, episode, and visit cohorts of the Spotlight data model. Additionally, the frequency and type of service inform Spotlight's risk factor analysis.
☒ **Pharmacy Claims**	**Please describe how your research objectives require Pharmacy Claims data:** As described in the previous question, Medical and Pharmacy Claims Files are essential to identifying the specific services and paid dates, paid amounts, admission types, and diagnoses and procedures. These data inform analyses of cost and utilization of health services and drugs by patient, provider, and product classifications, among others. Medical and Pharmacy claims populate the treatment cohort and the encounter, episode, and visit cohorts of the Spotlight data model. Additionally, the frequency and type of service inform Spotlight's risk factor analysis.
☐ **Dental Claims**	**Please describe how your research objectives require Dental Claims data:**
☒ **Member Eligibility**	**Please describe how your research objectives require Member Eligibility data:** The Member Eligibility file provides patient demographics and insurance coverage and product information. These data support risk factor calculation, longtitudinal and cross-sectional payer and product analyses.
☒ **Provider**	**Please describe how your research objectives require Provider data:** The Provider file is necessary to determine which providers, encrypted or not, provide services to patients. The Provider file includes the service/prescribing provider

	identifier and Specialty code. These data populate the Provider cohort in the Spotlight data model and enable analyses by individual provider, group, and site of service. Note: In order for Spotlight hospital and health plan users to determine which providers of service are more cost-effective or deliver high quality outcomes, it is necessary to link the unencrypted NPI to the national NPI database. Without this information, users will know that certain providers are better and more efficient but will not know who they are.
☒ **Product**	**Please describe how your research objectives require Product data:** MHDC uses insurance product, or business model, as a dimension in analyzing risk, cost, utilization, and outcomes relative to Product types.

IV. GEOGRAPHIC DETAIL
Please choose <u>one</u> of the following geographic options for MA residents. *For releases with 5 digit zip code, CHIA will apply a substance abuse filter which will remove all claims that include a substance abuse diagnosis.*

☐ 3 Digit Zip Code (MA) (standard)	☒ 5 Digit Zip Code (MA)***
***Please provide justification for requesting 5 digit zip code. Refer to specifics in your methodology: Providers designate their primary, secondary and tertiary service areas by aggregating zip codes. MHDC requires five-digit zip codes in order to construct each subscriber's service areas.	

V. DATE DETAIL
Please choose <u>one</u> option from the following options for dates:

☐ Year (YYYY) (Standard)	☐ Month (YYYYMM) ***	☒ Day (YYYYMMDD) *** [for selected data elements only]
*** If requested, please provide justification for requesting Month or Day. Refer to specifics in your methodology: Day-level detail, where available, is necessary to calculate readmissions and other date-driven quality indicators. Additionally, day-level detail informs more robust construction of clinical episodes and the cost, utilization, and quality attributes associated with them.		

VI. NATIONAL PROVIDER IDENTIFIER (NPI)
Please choose <u>one</u> of the following options for National Provider Identifier(s):

☐ Encrypted National Provider Identifier(s) (standard)	☒ Unencrypted National Provider Identifier(s)***

*** If requested please, provide justification for requesting unencrypted National Provider Identifier(s). Refer to specifics in your methodology:

In order for Spotlight hospital and health plan users to determine which providers of service are more cost-effective or deliver high quality outcomes, it is necessary to link the unencrypted NPI to the national NPI database. Without this information, users will know that certain providers are better and more efficient but will not know who they are.

VII.   MEDICAID DATA

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 to the administration of the Medicaid program. If you are requesting Medicaid data from Level 2 or above, please describe, in the space below, why your use of the data meets this requirement. Requests for 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.

Please see attached Medicaid Authorization. MHDC will provide MassHealth with the results of its analyses using Medicaid fee-for-service data.

MassHealth's is undertaking a transformation from a fee-for-service (FFS) payer to one that funds provider-led, integrated Accountable Care Organizations (ACO). These ACOs reduce cost and improves quality as providers are mobilized to manage risk, practice wisely, and prevent disease in order generate a marginal profit on reduced Medicaid spending.

Specific to the administration of the MassHealth program, the MassHealth claims data enables provider and payer end-users of Spotlight to:

1. Optimize the design of ACOs to improve their chances of success. Providers (e.g., community health centers, independent physician groups and hospital-based practices) must determine what factors (clinical expertise, scope of practice, costs and utilization, etc.) increase or reduce their prospects for success under reduced reimbursement.
2. Model the impact of disease and cost risk among patient populations to determine what clinical and financial risk management strategies might need to be deployed (e.g., working capital, staffing mix, preventive strategies, etc.)
3. Assist MCOs in planning for the administration of their MassHealth beneficiaries by modeling factors essential to ACO success (e.g., reduced cost and utilization, improved quality and outcome measures, improved enrollee health status, etc.)

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, 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):

- **Individual Provider:** Identifying the provider at the provider level is necessary to conduct case mix and severity-adjusted comparisons of resource utilization and cost. In order for referrers to send patients to high-value providers, this information is required.
- **Individual Facility:** Identifying the provider at the facility level is necessary to conduct case mix and severity-adjusted comparisons of resource utilization and cost. In order for referrers to send patients to high-value providers, this information is required.

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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.

- **Individual Provider:** MHDC will use the National Plan and Provider Enumeration System (NPPES) or the American Medical Association Physician Master file to access the identities of **individual** providers. The NPI will be used as the linking element.
- **Individual Facility:** MHDC will use the National Plan and Provider Enumeration System (NPPES) or the American Medical Association Physician Master file to access the identities of **facility** providers. The NPI will be used as the linking element.

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

Only aggregate analyses are performed at the provider level. MHDC maintains compliance with the small cell suppression requirement to prevent re-identification.

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 formulas will be used if they result in the display of a cell less than 11.

> We have no plans to publish or disclose CHIA data publicly in any setting or form.

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.

> The results will not be publicly available, they are only available to Massachusetts health care providers, payers and their industry associations that subscribe to the service.

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.)?

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

> Spotlight Analytics is designed to support numerous analytical initiatives through pre-built and user-defined analyses that are derived from data cubes of abstracted and aggregated CHIA dated. A "data cube" is a multi-dimensional array that supports analyses and reporting of multiple measures (e.g.: cost, utilization, outcomes) across numerous dimensions (e.g.: payer, provider, product, geography, disease). Additionally, the design of cubes and queries allow

for the removal of all PHI and the protection of patient privacy. As an example, Spotlight Analytics queries and filters include expressions that ensure that the "small cell" requirements for data presentation are met.

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?

The fee for Spotlight Analytics is on a sliding scale based on a providers' size, so that small providers will be able to afford the system.

X. APPLICANT QUALIFICATIONS

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

The Consortium has been providing Case Mix Data and Analytics to our clients for 38 years, without breach or compromise to patient privacy. Last year (2015), MHDC launched a secure web-based analytics utility, Spotlight Analytics, to enable payers and providers to conduct secure and compliant Case Mix analyses without accessing source Case Mix data. Later this year (2016) we will add our first APCD-derived analyses to the Spotlight Analytics utility, using APCD data through the year 2014. This application is being made in order to acquire the additional year of data from 2015 to add to the Spotlight Analytics tool. We have requested 2011-2014 as well to ensure that the data formats are the same year-over-year.

2. **Attach** résumés or curricula vitae of the Applicant/principal investigator, and co-investigators.   (These attachments will not be posted on the internet.)

XI. 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:	HBI Solutions, Inc.
Contact Person:	Eric Widen
Title:	President and CEO
Address:	530 Lytton Avenue, Second Floor, Palo Alto, CA 94301
Telephone Number:	(415) 350-3140
E-mail Address:	ewiden@hbisolutions.com
Organization Website:	www.hbisolutions.com

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.

Tasks: Application development, installation, and provision of ongoing support to the Spotlight Healthcare Data Platform and Spotlight Healthcare Analytics module. The Spotlight Data Platform uses data in OLAP cubes aggregated and abstracted from CHIA data to suppot the analytics dashboards.

Qualifications: HBI Solutions is a healthcare data analytics company headquartered in Silicon Valley. The company is five years old and their business is dedicated to health data analysis exclusively. The company was founded by Stanford researchers and healthcare leaders, each with over 20 years' experience in healthcare IT and data. Their technology is currently installed in the Maine Health Information Exchange which includes a five-year longitudinal history on over 1.3mn people and over 20mn encounters. The product is securely accessed by physicians, nurses, administrators and staff throughout the state on a daily basis. HBI has entered in to HIPAA BAA and subcontractor arrangements associated with managing protected health information for its clients.

Oversight: Denny Brennan, Executive Director and the Project Executive, will oversee the relationship with HBI Solutions. The technical activities and actions of HBI Solutions will be overseen by Brian Kelley, Director of IT & Data Services at MHDC and the Project's Data Steward. The review and documentation of all security and privacy-related activities of HBI Solutions will be overseen by Michele Alexanian, Director of Finance and the Project's Compliance Officer.

Monitoring: Oversight and Monitoring occurs during weekly status meetings spanning all phases and activities of the project including:

- Data receipt and loading; remove any temp files
- Prepare for and upload to Amazon Web Services environment
- Stage and create OLAP cubes; backup cubes and delete source files
- Test application with cubes
- Move cubes to production
- Return original CHIA data
- Changes in project staff and/or responsibilities

XII. FEE INFORMATION

Please consult the fee schedules for MA APCD Data and select from the following options:

☐ Researcher

☐ Others (Single Use)

☒ Others (Multiple Use)

Are you requesting a fee waiver?

☒ Yes s [MHDC will request to pay $7,500 for the additional year, following the receipt of 2011-2014 for $30,000]

☐ 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 :	
Title:	
Signature: (Applicant/Primary Investigator)	
Name:	Denny Brennan
Title:	Executive Director
Original Data Request Submission Date:	August 22, 2016
Dates Data Request Revised:	September 1, 2016

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)