

**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:	Sherman Zemler Wu
Title:	Senior Director, Clinical Program Planning and Strategy
Organization:	Beth Israel Deaconess Medical Center
Project Title:	Analysis of MA Market
IRBNet ID:	933219-1
Mailing Address:	330 Brookline Ave. ST-214
Telephone Number:	1-617-667-4094
Email Address:	szwu@bidmc.harvard.edu
Names of Co-Investigators:	Alexandria McPhreson, Ayad Shammout, Gail Piatkowski, Hanako Yamanaka, Katie Kobus Wilson
Email Addresses of Co-Investigators:	amcpher1@bidmc.harvard.edu, ashammou@bidmc.harvard.edu , gpiatkow@bidmc.harvard.edu, hyamanak@bidmc.harvard.edu, kkwilson@bidmc.harvard.edu
Original Data Request Submission Date:	8/24/2016
Dates Data Request Revised:	9/9/2016
Project Objectives (240 character limit):	Utilize data to assist in internal analyses related to clinical and facility planning, market share/competitor studies, service area assessments, and IP discharge, observation stay, and ED visit volume trends.

<p>Project Research Questions (if applicable) Business Use Case(s):</p>	<ol style="list-style-type: none"> 1. What is the relationship between inpatient, ED, and observation utilization at BIDMC and in MA? 2. How are inpatient, observation, and ED volumes trending over past years at BIDMC, our owned/clinical affiliates, and our competitors? 3. Where are our patients coming from? What areas of the state do patients travel for health care the most? Where should we allocate/reallocate health care resources? 4. What services are patients traveling to BIDMC for compared to traveling to other hospitals for? 5. How do Accountable Care Organizations, patient-centered medical homes and other innovations impact practice patterns? 6. In which clinical areas is there a need to build capacity to create better access for patients? 7. Are our lengths of stay and use of critical care days consistent with other area providers?
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II. PUBLIC INTEREST & PROJECT SUMMARY

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

Beth Israel Deaconess Medical Center will use the Case Mix Data to better understand the patterns of care within Massachusetts and also across the four hospitals that BIDMC owns and operates. As an institution, and a network, we are committed to delivering the highest value of health care in the marketplace across our network. Having access to CHIA's inpatient discharge, observation, and ED visit datasets will provide BIDMC the opportunity for comparative analysis that will improve the quality of care delivered, and efficiency with which our health care resources are deployed. These analyses have two primary goals, both of which are in the public's interest – 1. Improving the quality of care delivered to our patients and 2. Identifying more efficient ways to utilize health care resources.

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 pages) 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	<input type="checkbox"/> Level 1 – 3 Digit Zip Code <input type="checkbox"/> Level 2 – Unique Physician Number (UPN) + 5 Digit Zip Code <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 PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL: 	Year(s) of Data Requested:
Outpatient Observation	<input type="checkbox"/> Level 1 – 3 Digit Zip Code <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 PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL: 	Year(s) of Data Requested:
Emergency Department	<input type="checkbox"/> Level 1 – 3 Digit Zip Code <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 PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL: 	Year(s) of Data Requested:

2. FY 2015 Data: Beginning with fiscal 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 <input checked="" type="checkbox"/> 2015
<input checked="" type="checkbox"/> Inpatient Discharge	<p>Please describe how your research objectives require Inpatient Discharge data: Inpatient discharge data is necessary to:</p> <ul style="list-style-type: none"> • Analyze where BID (BIDMC & BID-owned/operated hospitals) patients seeking inpatient services are coming from • Determine which clinical areas there is a need to build capability in order to create better access for patients • Compare our inpatient discharges, and LOS, to other hospitals in the state • To perform marketplace studies to analyze trends/patterns in inpatient visits over time in MA • Analyse trends in IP discharges at both an organizational and state level • Perform IP service line analyses
<input checked="" type="checkbox"/> Outpatient Observation	<p>Please describe how your research objectives require Outpatient Observation data: Outpatient observation data is important as many hospitals experience a shift in discharges from inpatient to observation status. Outpatient Observation data is necessary to:</p> <ul style="list-style-type: none"> • Analyze where BID (BIDMC & BID-owned/operated hospitals) observation patients are coming from • Compare BIDMC and BID owned/affiliated hospitals' observation visits to other hospitals in the state • Compare our observation visits' LOS to other hospitals in the state • Analyze trends in observation stays at both an organizational and state level
<input checked="" type="checkbox"/> Emergency Department	<p>Please describe how your research objectives require Emergency Department data: Emergency department data is necessary to:</p> <ul style="list-style-type: none"> • Analyze trends in ED visits at both an organizational and state level • Analyze ED usage and determine if and what location an urgent care center could be opened to provide timely care in a more cost effective setting • Better understand the types of patients that come into the ED in order to understand how to get complex patients to use higher-acuity setting and lower complexity patients to use lower-cost settings • Perform marketplace studies to determine patterns of ED care in MA • Compare BIDMC and BID owned/affiliated hospitals' ED visits to other hospitals in the state

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:

<input type="checkbox"/> 3 Digit Zip Code (Standard)	<input type="checkbox"/> 3 Digit Zip Code & City/Municipality ***	<input checked="" type="checkbox"/> 5 Digit Zip Code ***	<input type="checkbox"/> 5 Digit Zip Code & City/Municipality ***
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*****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:**
 The 5-digit zip code is necessary for BID to perform service area analyses and analyze which specific towns/areas our patients are coming from, compared to previous years. This data can also be used to determine which areas patients are traveling to BIDMC from for specific services. This level of detail will help us better understand our patient population and their sociodemographic/community health needs in order to make more informed decisions about allocating or reallocating health care services to best benefit our patients' needs. This level of detail is necessary for us to map zip code of our pre-defined service areas, regions, etc. in order for us to better understand our patient population.

V. DEMOGRAPHIC DETAIL

Please choose one of the following demographic options:

<input type="checkbox"/> Not Requested (Standard)	<input checked="" type="checkbox"/> Race & Ethnicity***
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***** If requested please, provide justification for requesting Race and Ethnicity. Refer to specifics in your methodology:**
 Race and ethnicity data is important to help us better understand our patient population and identify the sociodemographic and community health needs of our patients. This information, in addition to the 5-digit zip code, will help us make more informed decisions about allocating and reallocating health care services to best benefit our patients' needs.

VI. DATE DETAIL

Please choose one option from the following options for dates:

<input type="checkbox"/> Year (YYYY)(Standard)	<input checked="" type="checkbox"/> Month (YYYYMM) ***	<input type="checkbox"/> Day (YYYYMMDD)***
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*****Please provide justification for the chosen level of date detail if requesting Month or Day. Refer to specifics in your methodology:**
 The month and year detail is important for us to analyze trends by month for various services and to take into account differences due to seasonality.

VII. PHYSICIAN IDENTIFICATION NUMBERS (UPN)

Please choose one of the following options for Provider Identifier(s):

<input checked="" type="checkbox"/> Not Requested (Standard)	<input type="checkbox"/> Hashed ID ***	<input type="checkbox"/> Board of Registration in Medicine # (BORIM) ***
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*****If requested please, provide justification for requesting Hashed ID or BORIM #. Refer to specifics in your methodology:**

VIII. HASHED UNIQUE HEALTH IDENTIFICATION NUMBER (UHIN)

Please choose one of the following:

<input checked="" type="checkbox"/> Not Requested (Standard)	<input type="checkbox"/> UHIN Requested ***
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***** If requested please, provide justification for requesting UHIN. Refer to specifics in your methodology:**

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):

CHIA data will be compared with previous years' data, from both CHIA and MHDC, to discern patterns and trends over time. Routine analyses will be used to compared FY15 CHIA data to data from previous years. The following CHIA data elements will be linked:

- Diagnostic Code/DRG will link to our DRG/ICD-9/ICD-10 Service Line files. These codes are grouped into the service lines that we utilize for our service line analyses.
- Zip Code will link to our Zip Code Reference file which links the zipcodes in the CHIA data set to specific towns, states, or pre-defined service areas
- Hospital ID will link to the hospital reference file which contains all information on specific organizaions, parent companies and affiliates.

Aggregate data will be used in combination with:

- Prior year Case Mix Data from MHDC & CHIA

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.

Deterministic algorithms are used to link CHIA data with the reference tables mentioned above e.g. unique zip codes, Org. ID, and DRG codes to produce the same output. Zip codes in the CHIA data will be mapped to our pre-defined service areas, regions, etc. in order to compare where BIDMC and our owned hospitals' patients are coming from compared to other hospitals in MA.

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

No disclosure or publication of data will occur that exposes individual identifiable data. Data disclosures and publications will strictly abide by the requirements of 957 CMR 5.02.

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 currently do not plan to use the data for publications. It is an internal data source to assist us in making operational and strategic decisions.

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.

N/A

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.)?

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

[Empty text box]

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?

[Empty text box]

XII. APPLICANT QUALIFICATIONS

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

Healthcare data analytics and utilization analysis is a core skill set of the individuals who will be utilizing this data. Individuals from Decision Support, Health Information Management and Strategic Planning and Business Development have the education and experience to process the data and work with clinicians and administration to use the analysis to help drive better patient care into the communities that we serve. In granting access to the data, BIDMC will apply the "least privilege" policy that we apply to other internal sensitive databases. Under this policy, we limit access to only those data fields necessary to perform one's roles and responsibilities.

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

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:	Sg2
Contact Person:	Ashraf Fadel
Title:	Associate Vice President Data Operations Sg2
Address:	5250 Old Orchard Road Skokie, IL 60077
Telephone Number:	847-779-5459
E-mail Address:	ajfadel@sg2.com
Organization Website:	http://www.sg2.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.

Sg2 uses specific elements of the FY15 inpatient casemix data to develop a custom utilization 5 and 10 year forecast for the state of MA and for BIDMC.

SG2 is a firm with analytics-based health care expertise who helps hospitals and health systems integrate, prioritize and drive growth and performance across the continuum of care. Over 1,200 organizations worldwide rely on Sg2's analytics, intelligent, consulting and educational services.

All users coming into contact with this data have been trained in HIPAA compliance and are subject to both Sg2 and CHIA's policies and procedures, with regard to the protection of patient data.

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 :	Sherman Zemler Wu
Title:	Senior Director, Clinical Program and Business Planning
Applicant's Signature:	
Name:	Sherman Zemler Wu
Title:	Senior Director, Clinical Program and Business Planning
Original Data Request Submission Date:	8/24/2016
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) n/a
- 2. Resumes of Applicant and co-investigators: 2 Attachments: Applicant & Co-Investigator Resumes *and* Third-Party Vendor (Sg2) Resumes
- 3. Data Management Plan (for each institution that will store CHIA Data): Previously completed for BIDMC. Third-Party Vendor (Sg2) Data Management Plan attached.