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:	Russ Gross
Title:	Senior Director Strategic Planning and Analysis
Organization:	Lifespan
Project Title:	Lifespan Market Data Update
IRBNet ID:	928200-1
Mailing Address:	117 Ellenfield Street, Suite 102, Providence, RI 02905
Telephone Number:	401-444-2023
Email Address:	Rgross@lifespan.org
Names of Co-Investigators:	Jessica Gelinas, Dorothy Peckham, Timothy Stearns, Susan Thompson
Email Addresses of Co-Investigators:	jgelinas1@lifespan.org dpeckham@lifespan.org sthompson1@lifespan.org tstearns@lifespan.org
Original Data Request Submission Date:	06/30/2016
Dates Data Request Revised:	
Project Objectives (240 character limit):	Lifespan monitors the health care delivery system in Southern New England to understand how changes in population, care delivery models, payer mix, physician practice patterns, payment, and access impact utilization of hospital based services across geographic communities and groups of patients. Massachusetts patients receive a host of services at Lifespan and are an integral part of the community served.
Project Research Questions (if applicable) Business Use Case(s):	1. Are age and disease specific use rates different in MA versus RI?

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2. How is use changing in RI and MA before and after the ACA ?

3. What impact do regional shifts in use have on the need for additional hospital and community based resources including surgery suites, beds, procedure labs,urgent and emergent care, hospitals, and physician specialists.

4. How do Lifespan's patients compare to community patients, and are there groups who appear to be underserved?

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II. PUBLIC INTERST & PROJECT SUMMARY

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

Lifespan is the largest provider of health services in Southeastern Mass and RI and has the only Acadamic Medical Center with a Level One Trauma Center outside Boston/Worcester. We provides access to the complete array of both pediatric medical and surgical and psychiatric services as well as the full compliment of adult medical and surgical services. Both RI and MA patients rely on our services, and in planning for the future, we rely on comprehensive and accurate data for understanding the supply and demand for services. Access to timely accurate data allows quanitative and qualitative analyses that support the evaluation of existing and new services, the correct sizing of services, and understanding issues of access and quality. To be responsive to the community's health care needs in an economically sound fashion, Lifespan uses data and analytic tools. The public is served best if we plan and operate based on a sound and accurate view of the environment within which we reside. The Massachusetts Casemix data we are requesting has been in use by us for the last 18+ years as a core part of that understanding, and has allowed us to ensure that we can provide needed services as the population grows and changes.

In planning health services to the population in our service area, Lifespan examines the population and its demographics and assesses how hospital based utlliization is changing over time to determine how best we can plan for the future. As physician and hospital practices evolve, and new reimbursement approaches that include a substantial focus on quality parameters are developed, inpatient , observation , and ED use rates are changing. They change by payer types , patient characteristics, physician practice and specialty, and disease types. To effectively size our enterprise, provide services in the most efficient and cost effective manner possible, and introduce appropriate programs based on both the changing population demographics and the changing health care environment, we require a window into these changing utilization patterns of the community we serve. We achieve this by purchasing data on both hospitals' service use and community health care service use. We put these together every year to portray a snapshot of the community which affords us the opportunity to plan for the directions we need to take in the future by type of care and service. Specific questions we use these data to address:

1. Based on historical trends and population projections for the future what is the expected demand for pediatric and adult med/surg admissions, and OR suites for inpatient surgery?

2. How will changes in ambulatory sensitive conditions impact the need for inpatient, emergency, and observation resources in the future?

3. How will changes in both demand, as identified in 1 and 2, and changes in LOS by type of service impact the demand for beds?

4. How have use rates for inpatient care been impacted by the two midnight rule and have observations

increased ? How has this varied by community, by payer, by disease type and by age group? Do these changes materially affect the model for beds by type of service?

5. How do physicians admissions patterns vary? What is the frequency of admissions by type of physican specialty and how is this changing?

6. Are there patient populations that appear to be underserved and what types of outreach programs can be developed to improve access to those populations?

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 Observation	☐ 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:
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**	Year(s) of Data Requested:

CHOSEN LEVEL:	

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:** Lifespan uses inpatient data from multiple states for service area planning, service delivery planning, benchmarking and population health management purposes.
☒ **Outpatient Observation**	**Please describe how your research objectives require Outpatient Observation data:** Lifespan uses observation data from multiple states for service area planning, service delivery planning, benchmarking and population health management purposes.
☒ **Emergency Department**	**Please describe how your research objectives require Emergency Department data:** Lifespan uses emergency department data from multiple states for service area planning, service delivery planning, benchmarking and population health management purposes.

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: Lifespan's service area includes all of RI and portions of MA that span across several counties bordering RI in Southeastern and Central MA. 5-digit zip codes are an element without which we cannot identify the patient population that we serve.			

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 are important metrics for planning purposes to help identify potentially underserved populations.

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:** The discharge month allows for identifying potential seasonality issues in hospitalizations, emergency room visits, and observations. This is important for bed planning.		

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:** Unencrypted physician identifiers are currently used by Lifespan with the RI Casemix data to identify admission and surgical patterns by physician specialty. Expanding that capability to our entire service area would benefit the population we serve.		

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: N/A	

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: N/A	

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):

Since the CHIA database uses codes to identify hospitals, Lifespan would need to link to a masterfile or reference table to translate the code into a hospital name. This is standard and is provided by CHIA under Supplemental III; Table 11 of the Casemix Technical Documentation. http://www.chiamass.gov/case-mix-data-documentation-archive/
The same is true of physician data. Individual physicians are identified in the data with a code that would need to be linked to a masterfile or reference table such as the MA state licensing data or the CMS NPI database – all publically available information - to translate the code to a provider name.
Aggregate Census data would be used at the town level to determine population use rates within Lifespan's service area.

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.

Linkage would be deterministic to identify volume trends and utilization rates of specific types of services or physician specialties for inpatient, observation and emergency patient populations within our service area.

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

Data is only linked in aggregate, and Lifespan is not requesting individual patient identifiers, therefore individual patients would not be able to be identified.

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.

The data is for internal planning purposes only and will not be published or otherwise disseminated.
However, the data may at times be used in aggregate for Certificate of Need applications to the RI DoH and as a result would be available to the public in those instances. Lifespan will not disaggregate data below the cell size limitations stipulated by MA CHIA.

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.

> Only as referenced above in the case of a Certificate of Need application where an integral part of determining need is the number of patients leaving the state of RI for care.

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.)?

> N/A

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

> N/A

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?

> N/A

XII. APPLICANT QUALIFICATIONS

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

> Lifespan uses these data to monitor its performance relative to the supply and demand for services in the community it serves, and to identify how it can adapt in the changing health care environment. The evaluation of health care use is a core analytic activity of our planning function. This is not research in the classic sense but rather ongoing analysis of this dataset in concert with census data, other purchased data sets, and internal data of our system. The Senior

Director for Strategic Plannning and Analysis, who leads this effort for the corporation, and whose CV is attached, has been engaged in providing healthcare strategic planning and analysis and advice to the corporation's leaders for 18 years. In addition, our Senior Healthcare Planner has an MS in Community Health and 17 years of experience in healthcare analysis and health sevices research and has an extensive backround in performing and leading complex quantitative studies. In addition, She has been mentoring Brown University graduate students from the MPH program for 11 years. She works with 3 analysts in her office who have extensive experience analyzing a range of data sets including the Massachusetts data as well as data from RI, claims data, survey data, clinical data, and census data.

LIFESPAN STAFF:

Priniciple Investigator:
Russell Gross
Senior Director

Analysts:
Jessica Gelinas, MS
Sr. Healthcare Planner

Dorothy Peckham
Sr. Healthcare Analyst

Susan Thompson
Information Analyst

Timothy Stearns, MS
Strategic Planning Analyst

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

See Attachment A

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:	Alison Wishnick
Title:	Director, Client Relations and Analytics
Address:	5250 Old Orchard Road, Skokie, IL 60077
Telephone Number:	847-779-5628
E-mail Address:	Awishnick@sg2.com
Organization Website:	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 will use select fields of the FY15 inpatient casemix data to create a custom 10-year forecasting model for Lifespan at the hospital, service line, and service area level. Our DUA with SG2 prohibits them from using the data for any other purpose.
>
> Sg2's analytics-based health care expertise helps hospitals and health systems integrate, prioritize and drive growth and performance across the continuum of care. Over 1,200 organizations around the world rely on Sg2's analytics, intelligence, consulting and educational services.
>
> Every year, they invest over 15,000 hours of expert research developing an actionable and accurate forecast, host domestic and international clients in a broad variety of live and Web-based events, and produce hundreds of pages of thought leadership on subjects of critical importance to value-driven growth and performance for today and tomorrow.
>
> All users coming into contact with the data have been trained in HIPPA compliance and are subject not only to SG2's policies and procedures with regard to data, but our own through the exchange of DUA's between Lifespan and SG2.

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?
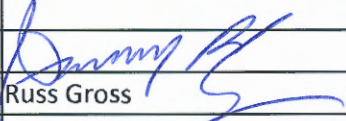☐   Yes
☒   No

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 :	
Title:	
Applicant's Signature:	
Name:	Russ Gross
Title:	Sr. Director Lifespan Strategic Planning and Analysis
Original Data Request Submission Date:	6/30/2016
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)