

Application for Massachusetts Case Mix and Charge Data (Non-Government) [Exhibit A – Data Application]

I. INSTRUCTIONS

This form is required for all Applicants, Agencies, or Organizations, hereinafter referred to as "Organization", except Government Agencies as defined in 957 CMR 5.02, requesting protected health information. All Organizations must also complete the Data Management Plan, and attach it to this Application. The Application and the Data Management Plan must be signed by an authorized signatory. This Application and the Data Management Plan will be used by CHIA to determine whether the request meets the criteria for data release, pursuant to 957 CMR 5.00. Please complete the Application documents fully and accurately. Prior to receiving CHIA Data, the Organization must execute CHIA's Data Use Agreement. Organizations may wish to review that document prior to submitting this Application.

Before completing this Application, please review the data request information on CHIA's website:

- Data Availability
- Fee Schedule
- Data Request Process

After reviewing the information on the website and this Application, please contact CHIA at casemix.data@state.ma.us if you have additional questions about how to complete this form.

The Application and all attachments must be uploaded to <u>IRBNet</u>. All Application documents can be found on the <u>CHIA</u> website.

Information submitted as part of the Application may be subject to verification during the review process or during any audit review conducted at CHIA's discretion.

Applications will not be reviewed until the Application and all supporting documents are complete and the required application fee is received.

A <u>Fee Remittance Form</u> with instructions for submitting the application fee is available on the CHIA website. If you are requesting a fee waiver, a copy of the Fee Remittance Form and any supporting documentation must be uploaded to IRBNet. Please be aware that if your research is funded and under that funding you are required to release raw data to the funding source, you may not receive CHIA Data.

II. FEE INFORMATION

- 1. Consult the most current Fee Schedule for Case Mix and Charge Data.
- 2. After reviewing the Fee Schedule, if you have any questions about the application or data fees, contact casemix.data@state.ma.us.
- 3. If you believe that you qualify for a fee waiver, complete and submit the <u>Fee Remittance Form</u> and attach it and all required supporting documentation with your application. Refer to the <u>Fee Schedule</u> (effective Feb 1, 2017) for fee waiver criteria.
- 4. Applications will not be reviewed until the application fee is received.
- 5. Data for approved Applications will not be released until the payment for the Data is received.

III. ORGANIZATION & INVESTIGATOR INFORMATION

Project Title:	Understanding Variations in Cancer Care in the State of
	Massachusetts, Measuring Value
IRBNet Number:	924048-1
Organization Requesting Data (Recipient):	Dana-Farber Cancer Institute
Organization Website:	https://www.dana-farber.org/
Authorized Signatory for Organization:	Anamika Chaudhuri
Title:	Director, Population Health Management
E-Mail Address:	ACHAUDHURI2@PARTNERS.ORG
Telephone Number:	617-632-5350
Address, City/Town, State, Zip Code:	450 Brookline Ave. Boston, MA 02215
Data Custodian:	Danielle Grosse
(individual responsible for organizing, storing, and archiving	
Data)	
Title:	Senior Analyst, Population Health Management
E-Mail Address:	Danielle_Grosse@dfci.harvard.edu
Telephone Number:	814-366-2882
Address, City/Town, State, Zip Code:	450 Brookline Ave. Boston, MA 02215
Primary Investigator (Applicant):	Anamika Chaudhuri
(individual responsible for the research team using the Data)	
Title:	Director, Population Health Management
E-Mail Address:	ACHAUDHURI2@PARTNERS.ORG
Telephone Number:	617-632-5350
Address, City/Town, State, Zip Code:	450 Brookline Ave. Boston, MA 02215
Names of Co-Investigators:	Danielle Grosse
E-Mail Addresses of Co-Investigators:	Danielle_Grosse@dfci.harvard.edu

IV. PROJECT INFORMATION

<u>IMPORTANT NOTE</u>: Organization represents that the statements made below as well as in any study or research protocol or project plan, or other documents submitted to CHIA in support of the Data Application are complete and accurate and represent the total use of the CHIA Data requested (the "Project"). Any and all CHIA Data released to the Organization under an approved application may ONLY be used for the express purposes identified in this section by the Organization, and for <u>no</u> other purposes. Use of CHIA Data for other purposes requires a separate Data Application to CHIA, with approval being subject to CHIA's regulatory restrictions and approval process. Unauthorized use is a material violation of your Organization's Data Use Agreement with CHIA.

1. What will be the use of the CHIA Data requested? [Check all that apply]

☐ Health planning/resource allocation ☐ Cost trends	
\boxtimes Quality of care assessment \square Rate setting	
☐ Research studies ☐ Severity index tool (or other studies ☐ Severity index index ☐ Severity ☐ Se	her derived input)
☐ Student research ☐ Utilization review of reso	ources
☐ Other (describe in box below)	
⊠ Quality of care assessment □ Rate setting □ Research studies □ Severity index tool (or oth studies) □ Student research ⊠ Utilization review of resonance	

The purpose of this research study is to create a baseline understanding of cancer care delivered by comprehensive cancer centers, academic institutions, and communities throughout the state of Massachusetts. This study will look at the overall

variation of charges and service utilization among episodes of oncology care and will attempt to account for these differences by looking at additional variables such as location of services (i.e. institution, specialty type and provider information), and clinical details, (i.e stage of disease and oncology diagnosis).

CHIA's data will be essential in understanding the variation among the care. This data will provide us a unique insight into not only the Dana-Farber patient population, but how cancer patients are treated outside of the Dana-Farber world as well by institution, cancer center and community.

2. Provide an abstract or brief summary of the specific purpose and objectives of your Project. This description should include the research questions and/or hypotheses the Project will attempt to address, or describe the intended product or report that will be derived from the requested Data and how this product will be used. Include a brief summary of the pertinent literature with citations, if applicable.

The objectives in this section are to understand the variations in cancer care delivery among different providers, different cancer types and their outcomes through the identification of efficiency indicators collected using CHIA administrative database.

- a) Is there variation in cancer-specific efficiency among provider peer groups?
- b) Is there variation in cancer-specific efficiency among different types of cancer?
- c) Can a combination of these efficiency indicators formulate a value metric for cancer care?

CHIA data offers a unique opportunity to not only understand better the care and outcomes for our patients but also to truly understand oncology care variations and measure value across providers in the state of Massachusetts.

Contrary to what Medicare database offers us, we should be able to capture a more complete picture of oncology patients not only the elderly, but also the younger and minorities.

These efficiency indicators, possible only by the use of an administrative database like CHIA data, would allow a consistent data collection and measurement methodology design that could be used as oncology care measures of performance across the state.

Findings could be escalated to inform policies or measurement development at the national level.

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1	Hasan	Institutiona	I Keview	Board I	(IKK)	reviewed	vour Project	.,

	Yes [If ye	s, a copy	of the app	proval lette	r and prot	ocol <u>musi</u>	t be inclu	ded with	the Ap	plication	package d	on IRBNet.
X	No this P	roject is	not humai	n subject re	search and	l does not	require l	RB revi	ew.			

4. <u>Research Methodology</u>: Applications must include either the IRB protocol or a written description of the Project methodology (typically 1-2 pages), which states the Project objectives and/or identifies relevant research questions. This document must be included with the Application package on IRBNet and must provide sufficient detail to allow CHIA to understand how the Data will be used to meet objectives or address research questions.

V. PUBLIC INTEREST

1. Briefly explain why completing this Project is in the public interest. Use quantitative indicators of public health importance where possible, for example, numbers of deaths or incident cases; age-adjusted, age-specific, or crude rates; or years of potential life lost. Uses that serve the public interest under CHIA regulations include, but are not limited to: health cost and utilization analysis to formulate public policy; studies that promote improvement in population health, health care quality or access; and health planning tied to evaluation or improvement of Massachusetts state government initiatives.

Anticipating and responding to evolving health care policies, using "big data" to guide the treatment of patients, as

well as adapting to the changing professional and financial aspects of Oncology will be addressed in "Understanding variations in cancer care in the state of Massachusetts. Measuring Value"

The objective in this section is to understand the full spectrum of care and outcomes (charges and utilization) for Dana-Farber Cancer Institute's patients before and after they visit and/or receive treatment at our center, to identify potential gaps within the care that we provide and opportunities for improvement.

The analytic methodology would be similar, if applicable, to both sections:

Providers will be assigned to peer groups of hospitals including: Comprehensive Cancer Centers (Dana-Farber is the only comprehensive Cancer Center in the State), Academic teaching Institutions and community hospitals. The indicators that would be used to assess the variation between providers and between cancers may include (but are not limited to):

- •Number of dates of service (visits, inpatient admissions, diagnostic tests)
- •Repeated diagnosis tests
- •Inpatient days
- •Charges per day of life (from diagnosis to death)
- •Charges per episode of care (different definitions of episodes may apply)
- •Charges of the end of life (last 6 months of life)

The primary research questions to be addressed by this study include:

a) Are there difference in outcomes (charges and utilization) driven by how patients share care with other non-DFCI providers?

CHIA data offers a unique opportunity to not only understand better the care and outcomes for our patients but also to truly understand oncology care variations and measure value across providers in the state of Massachusetts.

Contrary to what Medicare database offers us, we should be able to capture a more complete picture of oncology patients not only the elderly, but also the younger and minorities.

These efficiency indicators, possible only using an administrative database like CHIA data, would allow a consistent data collection and measurement methodology design that could be used as oncology care measures of performance across the state.

Findings could be escalated to inform policies or measurement development at the national level.

VI. DATASETS REQUESTED

The Massachusetts Case Mix and Charge Data ("Case Mix") are comprised of Hospital Inpatient Discharge, Emergency Department and Outpatient Hospital Observation Stay Data collected from Massachusetts' acute care hospitals, and satellite emergency facilities. Case Mix Data are updated each fiscal year (October 1 – September 30) and made available to approved data users. For more information about Case Mix Data, including a full list of available elements in the datasets please refer to release layouts, data dictionaries and similar documentation included on CHIA's website.

Data requests are typically fulfilled on a one time basis, however; certain Projects may require years of data not yet available. Applicants who anticipate a need for future years of data may request to be considered for a subscription. Approved subscriptions will receive, upon request, the <u>same data files and data elements</u> included in the initial release annually or as available. Please note that approved subscription request will be subject to the Data Use Agreement, will require payment of fees for additional Data, and subject to the limitation that the Data can be used only in support of the approved Project.

1. Please indicate below whether this is a one-time request, or if the described Project will require a subscription.	
oximes One-Time Request OR $oximes$ Subscription	
2. Specify below the dataset(s) and year(s) of data requested for this Project, and your justification for requesting <i>each</i> dataset. Data prior to 2004 <u>is not</u> available.	
☒ Hospital Inpatient Discharge Data	
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 □2015 □2016	
2017 □2018 ⊠2019 ⊠2020 ⊠2021	
Describe how your research objectives require Inpatient Discharge data: Explore charges and utilization for inpatient admissions of Data-Farber cancer patients	
☐ Outpatient Hospital Observation Stay Data	
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 □2015 □2016	
2017 □2018 □2019 □2020 □2021	
Describe how your research objectives require Outpatient Hospital Observation Stay data:	
Click here to enter text.	
☐ Emergency Department Data	
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 □2015 □2016	
2017 □2018 □2019 □2020 □2021	
Describe how your research objectives require Emergency Department data:	
Click here to enter text.	

VII. DATA ENHANCEMENTS REQUESTED

State and federal privacy laws limit the release and use of Data to the minimum amount of data needed to accomplish a specific Project objective.

Case Mix Data are released in Limited Data Sets (LDS). All applicants receive the "Core" LDS, but may also request the data enhancements listed below for inclusion in their analyses. Requests for enhancements will be reviewed by CHIA to determine whether each represents the minimum data necessary to complete the specific Project objective.

For a full list of elements in the release (i.e., the "Core" elements and enhancements), please refer to <u>release</u> <u>layouts</u>, <u>data dictionaries</u> and similar documentation included on CHIA's website.

Please note that CHIA Case Mix Data contain reports produced using proprietary computer software created, owned, and licensed by the 3M Company. All Copyrights in and to the 3M APRTM Software, and to the 3M APRTM DRG classification system(s) (including the selection, coordination and arrangement of all codes) are owned by 3M. All rights reserved.

1. Specify below which enhancements you are requesting in addition to the "Core" LDS.

Geographic Subdivisions

State code, five-digit ZIP code, and 3-digit ZIP code are available for patients residing in CT, MA, ME, NH, RI, VT, and NY. City or Town of residence is available for residents of MA only. States outside of this region will be coded as XX ("Other").

Select <u>one</u> of the follow	ving option	s:			
☐ 3-Digit Zip Code (Standard)	☐ 3-Digital City/Town	t Zip Code & n ***	☐ 5-Digit Zip Co		☑ 5-Digit Zip Code & City/Town ***
in your methodology	r: ent population	a's location can help	DFCI understand where		City/Town. Refer to specifics are going for Inpatient services, and
Demographic Data					
Selcect <u>one</u> of the follo	owing option	ns:			
☐ Not Requested (St	andard)		☐ Race & Ethni	icity***	
** If requested, prov methodology: To identify any racial and	•	_		-	Refer to specifics in your in their health care.
Date Resolution					
Select <u>one</u> of the follow	ving option	s for dates of ad	missions, discharges	s, and sig	gnificant procedures.
☐ Year (YYYY)(Sta	ndard)	☐ Month (YY	YYMM) ***	⊠ Day	y (YYYYMMDD)***
***If requested, pro methodology: Admit day is crucial to ad	· ·	-	G	•	•
Practioner Identifiers (UPN)				
Select <u>one</u> of the follow	wing option	S.			
☐ Not Requested (Sta	andard)	⊠ Hashed ID	***		ard of Registration in Medicine er(BORIM) ***
***If requested, pro in your methodology Required for obtaining the	7 :	_			IM Number. Refer to specifics groups.
Unique Health Informa Select <u>one</u> of the follow		, ,			
☐ Not Requested (St			⊠ UHIN Reques		
*** If requested pro	vide instif	ication for requ	iesting UHIN, Refei	r to spec	cifics in your methodology:

Need to decipher what kind of provider specialty; The UHIN will enable us to track the patients over the three-year period.
Hashed Mother's Social Security Number Select <u>one</u> of the following options:
*** If requested, provide justification for requesting Hashed Mother's SSN. Refer to specifics in your methodology: Click here to enter text.
VIII. DATA LINKAGE
Data linkage involves combining CHIA Data with other data to create a more extensive database for analysis Data linkage is typically used to link multiple events or characteristics within one database that refer to a sing person within CHIA Data.
1. Do you intend to link or merge CHIA Data to other data?☐ Yes
☑ No linkage or merger with any other data will occur
2. If yes, please indicate below the types of data to which CHIA Data will 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 (e.g., American Hospital Association data) ☐ Aggregate Data (e.g., Census data) ☐ Other (please describe):
3. If yes, describe the dataset(s) to which the CHIA Data will be linked, indicate which CHIA Data elements will be linked and the purpose for each linkage.
Click here to enter text.
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.
Click here to enter text.
5. If yes, attach or provide below a complete listing of the variables from <u>all sources</u> to be included in the final linked analytic file.
Click here to enter text.

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

Click here to enter text.

IX. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Do you anticipate that the results of your analysis will be published or made publicly available? If so, how do you intend to disseminate the results of the study (e.g., publication in professional journal, poster presentation, newsletter, web page, seminar, conference, statistical tabulation)? Any and 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 disclose a cell less than 11*, and percentages or other mathematical formulas that result in the display of a cell less than 11.

No. This data will only be used for internal evaluation; internal being DFCI employees.

Data will always be presented at an aggregated level. Before presenting the data internally, we will evaluate columns and rows of final tables. Those values that are less than 11 will be marked with an asterisk (*) while others, including the total, will remain untouched.

2. Describe your plans to use or otherwise disclose CHIA Data, or any Data derived or extracted from such Data, in any paper, report, website, statistical tabulation, seminar, or other setting that is not disseminated to the public.

Data will be extracted into the form of a report using Excel, Tableau or PowerPoint to present to stakeholders. Stakeholders will make decisions based on utilization and charge data extracted by analyst(s). All analytics will be at an aggregate level (i.e., utilization of DRGs at FY level, overall avg. risk of patients by provider). Data will be shared at a top 5-10 level, not all lines. In addition, there will be an evaluation on both columns and rows at the provider and/or DRG level. Any cell sizes within the tables that are less than 11 will be marked with an asterisk (*) while others, including the total, will remain untouched.

This data will not be shared with anyone outside of DFCI. When the data is shared, it will be done by presentations prepared and displayed by either Danielle or Anamika's machine. If presentations are to be distributed to stakeholders within DFCI, they will be sent secure with an encryption.

See section V. DATA SECURITY AND INTEGRITY for details on DFCI's privacy policy, access control, network security and physical security.

3. What will be the lowest geographical level of analysis of data you expect to present for publication or presentation (e.g., state level, city/town level, zip code level, etc.)? Will maps be presented? If so, what methods will be used to ensure that individuals cannot be identified?
This data will be presented at the aggregated level, we will never present data any lower than DRG and provider.
4. Will you be using CHIA Data for consulting purposes?☐ Yes☒ No
5. Will you be selling standard report products using CHIA Data?☐ Yes☒ No
6. Will you be selling a software product using CHIA Data? ☐ Yes ☑ No
7. Will you be using CHIA Data as in input to develop a product (i.e., severity index took, risk adjustment tool, reference tool, etc.) ☐ Yes ☑ No
8. Will you be reselling CHIA Data in any format not noted above? ☐ Yes ☐ No
If yes, in what format will you be reselling CHIA Data?
Click here to enter text.
9. If you have answered "yes" to questions 5, 6, 7 or 8, please provide the name and a description of the products, software, services, or tools.
Click here to enter text.
10. If you have answered "yes" to questions 5, 6, 7 or 8, what is the fee you will charge for such products, software, services or tools?
Click here to enter text.

X. APPLICANT QUALIFICATIONS

1. Describe your previous experience using hospital data. This question should be answered by the primary investigator and any co-investigators who will be using the Data.

Principal Investigator: Anamika Chaudhuri, PhD

Dr.Chaudhuri serves as Director of Population Health Management at Dana-Farber Cancer Institute (DFCI). She leads the Oncology Population Health Management program at DFCI and is part of the leadership team focused on health care delivery innovation and responsible for the development and support of system-wide programs to improve value and performance such as assessing the quality of care and efficiency of a shared care model or piloting alternative payment options for Oncology. She holds expertise in Health Care Delivery Models, payment models and value measurement in Health Care.

Co-Investigator: Danielle Grosse

Danielle is a Senior Analyst of the Population Health Management team at Dana-Farber Cancer Institute (DFCI). She is responsible for providing analytic development and support for system wide programs to improve quality of care for oncology patients. She has been working in the health care industry for 12 years. Her experience includes extracting, cleaning, and analyzing big datasets, including EHR and medical and pharmacy claims.

2. <u>Resumes/CVs</u>: When submitting your Application package on IRBNet, include résumés or curricula vitae of the principal investigator and co-investigators. (These attachments will not be posted on the internet.)

XI. USE OF AGENTS AND/OR CONTRACTORS

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. The Organization must have a written agreement with the agent of contractor limiting the use of CHIA Data to the use approved under this Application as well as the privacy and security standards set forth in the Data Use Agreement. CHIA Data may not be shared with any third party without prior written consent from CHIA, or an amendment to this Application. CHIA may audit any entity with access to CHIA Data.

Provide the following information for <u>all</u> agents and contractors who will have access to the CHIA Data. [Add agents or contractors as needed.]

AGENT/CONTRACTOR #1 INFORMATION				
Company Name:	Click here to enter text.			
Company Website	Click here to enter text.			
Contact Person:	Click here to enter text.			
Title:	Click here to enter text.			
E-mail Address:	Click here to enter text.			
Address, City/Town, State, Zip Code:	Click here to enter text.			
Telephone Number:	Click here to enter text.			
Term of Contract:	Click here to enter text.			

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

Click here to enter text.

for this Project, including how the Orga contractor has access.	anization will ensure the security of the CHIA Data to which the agent or
Click here to enter text.	
3. Will the agent or contractor have acc Organization's location, off-site server	cess to and store the CHIA Data at a location other than the and/or database?
☐ Yes	
⊠ No	
	Plan <u>must</u> be completed by the agent or contractor.
AGENT/CONTRACTOR #2 INFO	
Company Name:	Click here to enter text.
Company Website	Click here to enter text.
Contact Person:	Click here to enter text.
Title: E-mail Address:	Click here to enter text.
	Click here to enter text.
Address, City/Town, State, Zip Code:	Click here to enter text.
Telephone Number:	Click here to enter text.
Term of Contract:	Click here to enter text.
1. Describe the tasks and products assig completing the tasks.	gned to the agent or contractor for this Project and their qualifications for
Click here to enter text.	
	ht and monitoring of the activities and actions of the agent or contractor anization will ensure the security of the CHIA Data to which the agent or
Click here to enter text.	
3. Will the agent or contractor have acc Organization's location, off-site server	cess to and store the CHIA Data at a location other than the and/or database?
☐ Yes	
⊠ No	
4. If yes, a separate Data Management	Plan <u>must</u> be completed by the agent or contractor.

[INSERT A NEW SECTION FOR ADDITIONAL AGENTS/CONTRACTORS AS NEEDED]

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor

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XII. ATTESTATION

By submitting this Application, the Organization attests that it is aware of its data use, privacy and security obligations imposed by state and federal law *and* confirms that it is compliant with such use, privacy and security standards. The Organization further agrees and understands that it is solely responsible for any breaches or unauthorized access, disclosure or use of CHIA Data, including, but not limited to, any breach or unauthorized access, disclosure or use by any third party to which it grants access.

Organizations approved to receive CHIA Data will be provided with Data following the payment of applicable fees and upon the execution of a Data Use Agreement requiring the Organization to adhere to processes and procedures designed to prevent unauthorized access, disclosure or use of data.

By my signature below, I attest: (1) to the accuracy of the information provided herein; (2) this research is not funded by a source requiring the release of raw data to that source; (3) that the requested Data is the minimum necessary to accomplish the purposes described herein; (4) that the Organization will meet the data privacy and security requirements described 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 (5) to my authority to bind the Organization.

Signature: (Authorized Signatory for Organization)	X Anamika Chaudhuri Anamika Chaudhuri Director
Printed Name:	Click here to enter text.
Title:	Click here to enter text.
Date:	Click here to enter text.

Attachments:

A completed Application must have the following documents attached to the Application or uploaded separately to IRBNet:

\perp 1. IRB approval letter and $\mathfrak p$	protocol (if applicable),	or research methodol	logy (if	protocol is not atta	(ched

- \square 2. Data Management Plan (including one for each agent or contractor that will have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database);
- ☐ 3. CVs of Investigators (upload to IRBNet)

APPLICATIONS WILL NOT BE REVIEWED UNTIL THEY ARE COMPLETE, INCLUDING ALL ATTACHMENTS.