CHIA Non-Governmental Application for Massachusetts Case Mix Data
[Exhibit A: Data Application]

I. INSTRUCTIONS

This form is required for 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 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. Applicants 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.

All attachments must be uploaded to IRBNet with your Application. All Application documents can be found on the CHIA website in Word and in PDF format or on IRBNet in Word format. If you submit a PDF document, please also include a Word version in order to facilitate edits that may be needed.

Applications will not be reviewed until the Application and all supporting documents are complete and the required application fee is submitted. A Fee Remittance Form with instructions for submitting the application fee is available on the CHIA website and IRBNet. *If you are requesting a fee waiver, a* copy of the Fee Remittance Form and any supporting documentation must be uploaded to IRBNet.

II. ORGANIZATION AND INVESTIGATOR INFORMATION

Project Title:	Improving Methods for Traumatic Injury Surveillance
IRBNet Number:	1048841-1
Organization Requesting Data:	Northeast Center for Occupational Health and Safety
Organization Website:	**www.necenter.org**
Authorized Signatory for Organization:	**Anne Gadomski, MD**
Title:	Director, Research Institute
E-Mail Address:	anne.gadomski@bassett.org
Address, City/Town, State, Zip Code:	One Atwell Road, Cooperstown, NY 13326
Primary Investigator:	Erika Scott, PhD
Title:	Deputy Director, Research Scientist
E-Mail Address:	erika.scott@bassett.org
Telephone Number:	(607) 547-6023 Ext. 2204
Names of Co-Investigators:	Paul Jenkins
E-Mail Addresses of Co-Investigators:	paul.jenkins@bassett.org

III. FEE INFORMATION

1. Consult the Fee Schedule for Case Mix and Charge Data and select one of the following options:

☒ Researcher
☐ Other
☐ Reseller

2. Are you requesting a fee waiver?

☒ Yes
☐ No

3. Complete and submit the Fee Remittance Form. If requesting a fee waiver, submit a letter stating the basis for your request (if required). Please refer to the Fee Schedule (effective Feb 1, 2017) for fee waiver criteria.

IV. PROJECT INFORMATION

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

☒ Epidemiological   ☐ Health planning/resource allocation   ☐ Cost trends
☒ Longitudinal Research   ☐ Quality of care assessment   ☐ Rate setting
☐ Reference tool   ☐ Research studies   ☐ Severity index tool
☒ Surveillance   ☐ Student research   ☐ Utilization review of resources
☐ Inclusion in a product   ☐ Other (describe in box below)

2. Provide a summary of the specific purpose and objectives of your Project. This may include research questions and/or business use Projects.

> The long-term goal of this study is to improve the low-cost injury surveillance methods for the agricultural, forestry and commercial fishing industries in the Northeast. This will enhance understanding of the causes of traumatic injuries, identify high-risk groups, and allow for ongoing program evaluation.

3. Has an Institutional Review Board (IRB) reviewed your Project?
☒ Yes [*If yes, a copy of the approval letter and protocol must be included with the Application package on IRBNet.*]
☐ No, this Project is not human subject research and does not require IRB review.

4. **Research Methodology**: Applicants must provide either the IRB protocol or a written description of the Project methodology (typically 1-2 pages), which should state the Project objectives and/or identify 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 your Project is in the public interest. *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.

> Surveillance is the foundation of public health practice and is a necessity in setting research priorities, evaluating interventions, and fostering the most effective allocation of public health dollars. This study aims to improve occupational injury surveillance among Massachusetts farmers, loggers, and commercial fishermen. We use similar methodologies in other Northeast states to track occupational injury in the region.

VI. DATASETS REQUESTED

1. Specify below the dataset(s) and year(s) of data requested for this Project, and your justification for requesting *each* dataset.

☒ **Hospital Inpatient Discharge Data**
☐2004 ☐2005 ☐2006 ☐2007 ☐2008 ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 ☐2014 ☒2015

Describe how your research objectives require Inpatient Discharge data:
NEC researchers have found that surveillance systems that use multiple sources of data are more effective in capturing not only case counts, but detail that is useful for intervention prioritizing and planning.

☒ **Outpatient Observation Data**
☐2004 ☐2005 ☐2006 ☐2007 ☐2008 ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 ☐2014 ☒2015

Describe how your research objectives require Outpatient Observation data:
NEC researchers have found that surveillance systems that use multiple sources of data are more effective in capturing not only case counts, but detail that is useful for intervention prioritizing and planning.

☒ **Emergency Department Data**
☐2004 ☐2005 ☐2006 ☐2007 ☐2008 ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 ☐2014 ☒2015

Describe how your research objectives require Emergency Department data:
NEC researchers have found that surveillance systems that use multiple sources of data are more effective in capturing not only case counts, but detail that is useful for intervention prioritizing and planning.

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2. Case Mix and Charge Data are updated each fiscal year. As certain Project objectives may require future years of data not yet available, CHIA will consider requests for additional fiscal years of the *same data (i.e., same elements and files)* without the need to submit a new application. Please note that approved requests will be subject to the Data Use Agreement and fees for additional data. Please indicate below whether this is a one-time request, or if the described Project will require future years of Data and if so, which years.

☐ One-Time   **OR**   ☒ 2016 ☒ 2017 ☒ 2018 ☐ 2019 ☐ 2020

VII. DATA ELEMENTS 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 and Charge Data are grouped into six "Levels" or Limited Data Sets (LDS) for release, depending on the fiscal year. Data for FY 2004 – 2014 are organized into Levels. Level 6 Data will be released to Government Applicants only. *CHIA staff will use the information provided in this section to determine the appropriate Level of Data justified for release.*

Data for FY 2015 and later are organized into LDS's. All applicants receive the "Core" LDS, but may also request additional elements listed below for inclusion in their analyses. Requests for additional elements 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 additional elements), please refer to release layouts, data dictionaries and similar documentation included on CHIA's website.

1. Specify below which elements you are requesting in addition to the "Core" LDS. CHIA will use this information to determine what Level of data is needed for pre-FY 2015 data requests.

Geographic Data

The geographic sub-divisions listed below are available for CT, MA, ME, NH, RI, VT, and NY residents only for FY 2015 and after. Fiscal years 2004 – 2014 will contain the geographic sub-divisions listed below for all states. Choose *one* of the following geographic options.

☐ 3-Digit Zip Code (Standard)	☐ 3-Digit Zip Code & City/Town ***	☒ 5-Digit Zip Code ***	☐ 5-Digit Zip Code & City/Town ***
***If requested, provide justification for requesting 5-Digit Zip Code or City/Town. Refer to specifics in your methodology:**			
The 5-digit zip code will be helpful for our research team to perform spatial analysis on the data to determine geographic factors of traumatic injury prevelance. Additionally, the 5-digit zip code is necessary for our Merge Matching processes of hospital to PCR records to ensure the same case is not counted twice. County will be the lowest level of geographic analysis and we do not publish cells of less than eleven.			

Demographic Data

Choose *one* of the following demographic options:

☒ Not Requested (Standard)	☒ Race & Ethnicity***
** If requested, provide justification for requesting Race and Ethnicity. Refer to specifics in your methodology:**	
Race and ethnicity are required to understand vulnerable populations and patterns among patients presenting with occupational injury in agriculture, forestry and fishing.	

Dates

Choose *one* option from the following options for dates of admissions, discharges, and significant procedures:

☐ Year (YYYY)(Standard)	☐ Month (YYYYMM) ***	☒ Day (YYYYMMDD)***
***If requested, provide justification for requesting Month or Day. Refer to specifics in your methodology:**		
Necessary for our Merge Matching processes of hospital to PCR records to ensure the same case is not counted twice. We probablistically match on date of admission/run date, zipcode, date of birth, and gender. The same team performs the linkage however a strip and destroy methodogy is employed and the records that we ananlyze have identifers removed.		

Practioner Identifiers (UPN)

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

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

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

Unique Health Information Number (UHIN)
Please choose *one* of the following:

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

Hashed Mother's Social Security Number
Please choose *one* of the following:

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

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 single 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 data base(s) to which the CHIA Data will be linked, indicate which CHIA Data elements will be linked and the purpose for each linkage.

CHIA Data to be linked to MATRIS ambulance record dataset. CHIA elements to be used for linkage: Date of Birth, Gender, Admission/incident Date, 5 digit Zipcode

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.

The CHIA case mix and MATRIS datasets will be probablistically linked by our research team. Once the linkage has been completed, identifiers will be removed from the dataset. The EMS and hospital data sets were merged in SAS

using the same four variables that were used to eliminate the duplicates. This matching process accounted for late night ambulance runs, where the patient may have been admitted early the following day, by performing a second match-merge with the EMS run date incremented by one.

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

After match merge process is complete, identifiers are stripped. For example, Date of Birth becomes Age. In addition, the smallest level we will do geographic analysis on is county, and we will follow CHIA's regulations of not disclosing any cells less than 11. If cell sizes are small, we would group counties into regions or report on the state, as a whole.

IX. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from CHIA Data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting. 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.

Our findings will be published in peer reviewed academic journals, reports and scientific articles. We frequently publish in the Journal of Agromedicine, Journal of Agricultural Safety and Health, and American Journal of Industrial Medicine. We will have our team review the analysis of each publication, along with our information specialist to ensure that we do not inadvertently publish any cells less than 11. We also turn our publications to short reports or infographics that can be posted to our website or used at conferences/tradeshows. This format is easily accessable by the farmers, loggers, and fishermen who's health we aim to improve. Lastly, we may prepare powerpoint presentations or other oral presentations that make us of the results we learn from MA data, however the same rules will be followed. Credit for the data will also be given to CHIA and the Massachusetts Department of Public Health.

Examples of our publications can been seen here:
Scott E, Bell E, Krupa N, Hirabayashi L, Jenkins P. Data processing and case identification in an agricultural and logging morbidity surveillance study: Trends over time. Am J Ind Med. 2017 Sep;60(9):811-820. doi: 10.1002/ajim.22751. PubMed PMID: 28766767.

Scott E, Bell E, Hirabayashi L, Krupa N, Jenkins P. Trends in Nonfatal Agricultural Injury in Maine and New Hampshire: Results From a Low-Cost Passive Surveillance System. J Agromedicine. 2017;22(2):109-117. doi: 10.1080/1059924X.2017.1282908. PubMed PMID: 28103182.

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

Results will not be shared beyond what was described in question 1 above.

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, by a subscription, etc.)?

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

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?

X. INVESTIGATOR 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.

Extensive experience with the linkage of electronic pre-hospital care report databases and hospitalization data for occupational health surveillance make me particularly well suited to help meet the aims of this study. In particular, I am very familiar with day to day management of data and of surveillance research protocols. For the past five years, I have been personally responsible for the facilitation and completion of state health department data applications and agreements. I have a demonstrated track record of successfully promoting the work of our Center and of the NYCAMH/NEC surveillance project at various conferences and meetings. I have developed and successfully submitted IRB applications and renewals and acted as a liaison between contractors/stakeholders and the principle investigator. I have also played a key role in the publication of research results. Thus, my previous experience in occupational health research, hazard assessment, data management, and industrial hygiene, has provided the expertise and background required to successfully meet the objectives of this proposal.

Paul Jenkins, PhD, as Co-I has nearly thirty years of experience as a biostatistician at a research hospital and has served as principal investigator on several studies similar to this one.

2. **Resumes/CVs**: 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 Agency assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to contractors. The Agecny 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 amendemtn to this Application. CHIA may audit any entity with access to CHIA Data.

Provide the following information for **all** agents and contractors who will work with the CHIA Data. [*Add agents or contractors as needed.*]

AGENT/CONTRACTOR #1 INFORMATION	
Company Name:	n/a
Company Website:	
Contact Person:	
Title:	
E-mail Address:	
Address, City/Town, State, Zip Code	
Telephone Number:	
Term of Contract:	

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

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database?
- ☐ Yes
- ☐ No

4. If yes, a separate Data Management Plan **must** be completed by the agent or contractor.

AGENT/CONTRACTOR #2 INFORMATION	
Company Name:	
Company Website:	
Contact Person:	
Title:	
E-mail Address:	
Address, City/Town, Zip Code	
Telephone Number:	
Term of Contract:	

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

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database?

    ☐ Yes
    ☐ No

4. If yes, a separate Data Management Plan **must** be completed by the agent or contractor.

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 whicih it grants access.

Applicants 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) that the requested Data is the minimum necessary to accomplish the purposes described herein; (3) 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 (4) to my authority to bind the Organization.

Signature: (Authorized Signatory for Organization)	*(signature)*
Printed Name :	Anne Gadomski

Attachments
A completed Application must have the following documents attached to the Application:
☐ 1. IRB approval letter and protocol (if applicable)
☐ 2. Research Methodology (if protocol is not attached)
☐ 3. CVs of Investigators
☐ 4. 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)

==Applications will not be reviewed until they are complete, including all attachments.==

TRACKING TABLE (to be completed by CHIA staff only)	
Complete Application Received	
Application Fee Received	
Data Privacy Committee Review	
Data Release Committee Review	
Linkages Approved (as described)	
Approved for additional years of data	
Executive Director Approval	
Data Fee Received	
Date of First Audit	
IT Extract #	

Attachment #1 – IRB Approval Letter & Protocol or Research Methodology

Attachment #2 – Data Management Plan(s)