

# **ASTHO Environmental Health Tracking: Peer-to-Peer Fellowship Program**

## **Phase II Report**



October 27, 2015

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### **Submitted to:**

Association of State and Territorial Health Officials  
Environmental Health Tracking: State-to-State Peer Fellowship Program  
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## **BACKGROUND**

The Rhode Island Department of Health (RIDOH) is the statewide health agency responsible for protecting and promoting the health of Rhode Islanders, serving a population of 1,050,292. The primary mission of RIDOH is to prevent disease and to protect and promote the health and safety of the people of Rhode Island.

Furthering its overall mission, RIDOH has added to its vision the commitment to track environmental health outcomes and provide Nationally Consistent Data and Measures (NCDMs) to the National Environmental Public Health Tracking Network (NEPHTN).

A key characteristic of Tracking is the emphasis on data integration across health, human exposure, and hazard information systems. An Environmental Health Tracking Fellowship Program in Rhode Island allows for the utilization of integrated environmental and health data to obtain information in support of activities that improve the health of communities. Moreover, contributing to the NEPHTN through the ASTHO Fellowship Program advances state and local public health capacity in the area of environmental health surveillance.

Environmental hazards affect human health and have important public health consequences. Like many state health departments, RIDOH's ability to take effective action to reduce the consequences of environmental risks is limited by surveillance systems that cannot link environmental and health data. Through ASTHO's Environmental Public Health Tracking Peer-to-Peer Fellowship Program RIDOH has been able to utilize data and information regarding health outcomes including Hospitalizations and Emergency Department data. The availability of these types of data in a standardized network enable researchers, public health authorities, healthcare practitioners, and the people of Rhode Island to have a better understanding of the possible associations between the environment and adverse health effects and contribute significantly to the National Tracking Network.

## **INTRODUCTION**

The purpose of a Rhode Island's participation in the ASTHO Tracking Fellowship Program is to establish data partnerships and collaboration within RIDOH, CDC, ASTHO, and other state fellows, and to compile statewide data on NCDMs for inclusion on the National Tracking Network and one day, the state network.

Through ASTHO's Tracking Fellowship Program, RIDOH will develop, implement, and maintain a Public Health Tracking Program for the state of Rhode Island. The State Program will utilize integrated health and environmental data to obtain information in support of activities that improve the health of communities. RIDOH's Public Health Tracking Program established through this opportunity will advance state and local public health capacity in the area of environmental health surveillance, create partnerships with local, state, and federal partners, and provide NCDMs to the National Tracking Network.

Measurable outcomes of the program will be in alignment with the following performance goals for the National Center for Environmental Health (NCEH): Prevent or reduce illnesses, injury, and



death related to environmental risk factors; and increase the understanding of the relationship between environmental exposures and health effects.

## Collaboration

Inter-agency collaboration is an essential component to a successful Environmental Health Tracking Fellowship with partners taking an active participatory role through the Technical Advisory Group (TAG). The TAG is responsible for providing technical guidance to ensure implementation of ASTHO's Environmental Public Health Tracking Program strategies, activities, and outcomes. Throughout Phase II, TAG members (Table 1) have worked closely to review project timelines, data and reporting requirements, data and access requirements, communication, and program effectiveness.

Table 1: TAG Membership

ASTHO Tracking Fellowship: Technical Advisory Group Membership		
Name	Title	TAG Role and Affiliation
Amie Parris*	Assistant Health Program Administrator	Project Lead
Samantha Viner-Brown*	Chief, Center for Health Data and Analysis	Data Steward Lead
Kathy Taylor*	Systems Analyst, Center for Health Data and Analysis	Data Steward
Megan Towle*	Public Health Epidemiologist, Asthma Control Program	Data Steward
Robert Childs	Chief, Division of Information Technology	Information Technology
John Fulton, Ph.D.	Assistant Director of Health Policy	Evaluator
Andrea Bagnall-Degos	Chief, Division of Communications	Communications/Web Lead

\* ASTHO Fellowship Program Key Staff

Phase II TAG meetings centered on the needs surrounding data submission and discussions for identifying support for submission. Throughout Phase II many technical barriers were identified during TAG meetings. In addition, TAG meetings identified a shortage of internal support necessary to successfully complete full data submission.

Table 2: TAG Workgroup Meetings

ASTHO Tracking Fellowship: Phase II TAG Workgroup Meetings		
Date	Participants	Discussion Topics
7/10/2015	Amie Parris, Sam Viner-Brown, Kathy Taylor, Megan Towle, Julian Drix	New Data Steward, Phase I Report, CDC NEHT Conference
8/20/2015	Amie Parris, Sam Viner-Brown, Kathy Taylor, Megan Towle	Metadata Pre-Submission Review Feedback, Full Metadata Submission, Phase II Data Submission
9/25/2015	Amie Parris, Megan Towle	Discussion of the Phase II and Fellowship wrap-up call with CDC and ASTHO; Schedule time with Alaska on data submission strategies
10/2/2015	Amie Parris, Megan Towle	Review strategies from Alaska conference call on 10-1-2015
10/16/2015	Amie Parris, Megan Towle	Hospital and ED data submission, discuss call with New York state on validation errors



## Travel

Despite efforts, the RI tracking fellowship team was not able to attend the 2015 Environmental Public Health Tracking Grantee Meeting, held on August 25th – 28th in Atlanta, GA. Due to a lack of full-time staff assigned to this fellowship, staff members were not able to reassign regular duties in order to attend the meeting. Attending this meeting would have provided an opportunity to speak with awarded states on data submission strategies as well as the opportunity to speak with CDC on gaining additional support needed to complete the full data submission. For future fellowship or award opportunities it will be important to emphasize the importance and critical need to attend this event, especially for new fellowship and or awarded states.

## Phase II Activities

### Timeline

During Phase II a shift was implemented in the data submission window from September 30, 2015 to October 16, 2015 (Table 3). This modification provided an opportunity to spend more time correcting Phase I metadata validation errors that overlapped between phases.

Table 3: Phase II Revised Timeline

Phase II Timeline: July 1, 2015-October 16, 2015	
Metadata Window	September 14-18
Week 1 Data Submission	September 28-October 2
Validation Scheduled	October 5-16
Week 2 Data Submission	October 19-23
Phase II Final Report	October-15

## Data Acquisition and Creation

Rhode Island has provided the following NCDMs (Table 4) to CDC and the NEPHTN. RIDOH currently holds extracted data from 2000-2013 for hospitalizations and 2005-2013 for ED visits. The NCDMs below are record-level and coded by ICD-9-CM. Data requests from outside the Department were therefore not required.

Table 4: RI Data Submission Intentions

ASTHO Tracking Fellowship: Data Intentions		
State	Content Area	Years to Submit
RI	Asthma Hospitalizations	2000-2013
	Heart Attack Hospitalizations	2000-2013
	Carbon Monoxide Hospitalizations	2000-2013
	Heat Stress Hospitalizations	2000-2013
	Asthma Emergency Department Visits	2005-2013
	Carbon Monoxide Emergency Department Visits	2005-2013
	Heat Stress Emergency Department Visits	2005-2013



## Data Submission

For Phase II of the ASTHO Tracking Fellowship RIDOH attempted to submit and validate Hospital and ED data to CDC. However, by the end of Phase II RI was unsuccessful in correcting all errors necessary for successful validation. Although all files did successfully pass SAMS requirements, errors were noted during validation. Upon contacting CDC tracking support for technical assistance regarding these errors, RI was instructed to refer to Sharepoint. RI reviewed documents within Sharepoint but was unable to find information regarding our errors. A sample of the error files received are below:

### Message from EPHTN Production Gateway

You are receiving this email notification to advise you that your DPS NCDM data feed (AS-HOSP) file submission on Fri Oct 02 11:39:37 EDT 2015 was unsuccessful. Please check the file for errors and resubmit.

Submitter:	Meghan Towle
Archive File Name:	NCDM_AS-HOSP_2000.zip
Individual File Name:	NCDM_AS-HOSP_2000.xml
Metadata ID:	aaebd12d-01cd-49c0-952e-e0cebacc6e31
Metadata Year:	
Data Feed Type:	AS-HOSP
Jurisdiction:	RI
NCDM Batch Key:	5c0e91e3-e132-4bef-b28a-f1163e8be0bf
NCDM Load Key:	276f8e70-ff96-41f5-b4a9-fb551aaa5b69
SAMS ID:	95790

The errors reported were:

- Error at line 18. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 58. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 98. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 138. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 178. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 218. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 258. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 298. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 338. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.
- Error at line 378. cvc-complex-type.2.4.a: Invalid content was found starting with element 'age'. One of '{<http://www.ephntn.org/NCDM/PH/HospitalizationData>":AdmissionMonth}' is expected.

From here, RI contacted New York in hopes they may be able to assist us identifying and correcting the errors within their system. New York agreed to help and requested the proc contents (below) of the data that was used to create the XML file.



Data Set Name			
LIBRARY_EPHITALLNEW	Observations	34827	
Member Type	DATA	Variables	29
Engine	V9	Indexes	0
Created	Friday, October 01, 2016 01:13:51 PM	Observation Length	176
Last Modified	Friday, October 01, 2016 01:13:51 PM	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label			
Data Representation	WINDOWS_32		
Encoding	winlat1 Western (Windows)		

  

Engine Host Dependent Information			
Data Set Page Size	16384		
Number of Data Set Pages	597		
First Data Page	1		
Max Obs per Page	92		
Obs in First Data Page	70		
Number of Data Set Repairs	0		
Filename	C:\Users\Meghan7\Documents\Hospital discharge files\HDD09-1007\epitalnew sas7bit		
Release Created	9/22/2016		
Host Created	WJL_VJPRG		

  

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Label
14	admits	Nam	8	MDYY10	
18	admissionmonth	Nam	4		
18	aprgroup	Nam	4		
18	county	Char	3		
13	date	Nam	8	MDYY10	
1	di1	Char	3		principal diagnosis
2	di2	Char	3		secondary diagnosis
3	di3	Char	3		third diagnosis
4	di4	Char	3		fourth diagnosis
5	di5	Char	3		fifth diagnosis

  

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Label
6	di6	Char	3		sixth diagnosis
7	di7	Char	3		seventh diagnosis
8	di8	Char	3		eighth diagnosis
9	di9	Char	3		ninth diagnosis
10	di10	Char	3		tenth diagnosis
11	di11	Char	3		eleventh diagnosis
12	icd9c	Char	3		icd9 code
23	icd9cmethcd	Nam	4		
22	icd9c	Nam	4		
29	icd9cmethcid	Nam	4		
19	icd9cmethcid	Nam	4		
20	mechanism	Char	4		
24	outofstateinclusion	Nam	8		
17	race	Char	9		
25	racesubjectinreported	Nam	8		
21	sex	Char	1		
16	state	Char	2		
26	transformrelatlon	Nam	4		
27	yearadmitted	Nam	4		

  

Sort Information	
Sortedby	yearadmitted
Validated	YES
Character Set	ANSI

RI had additional correspondence with New York throughout the month of October however, RI was not able to successfully correct the validation errors for all files.

Since we were unable to get the New York data submission system to work and no alternative submission process is offered by CDC, RI set up a webinar and call with the State of Alaska who volunteered to show us there process for data submission. Although we found Alaska's method effective it was an extremely long and tedious technique that would require weeks, if not months of manual data file creation via excel to complete. RI may have been able to successfully create and submit our files via this path if there was clear written instruction in Sharepoint and this process had been identified in the beginning as one way to create and submit data files. As RI learned of this process in October we were unable to allocate the time needed to execute it.

Therefore, despite our best efforts to seek external support and training to correct validation errors, RI was not able to meet this requirement. To ensure requirements of this fellowship opportunity was met, RI did ensure all NCDMs for all years identified were successfully submitted to CDC via SAMS.

## Recommendations and Lessons Learned

- Based on Rhode Island's experience during this opportunity we do not believe there is sufficient technical support from CDC for this project to be considered a fellowship. Opposed to being a one-on-one or group training and guide to creating and submitting NCDMs to CDC this experience was more of a request for datasets in a very specific format. If CDC is unable to provide technical support for the NY data submission system (only method offered) then an alternative system or method should be identified that CDC will provide training and support for.



- Necessary documents and tools needed to complete this fellowship are located all over Sharepoint. Presentations explaining the metadata and full data submission process are combined with grantee information leaving fellows unable to identify which information belongs to which group (grantees or fellows). In addition, all metadata information is located in the metadata file however, the files contents is a mix of both fellow and grantee resources despite fellows not reporting on many grantee NCDMs. We feel it would be much more clear and helpful if documents were created specifically for fellows and everything a fellow would need is located in the fellowship folder. Although it is nice to offer presentations and resources geared for grantees it is extremely confusing especially in the beginning of the fellowship.
- An explanation of the requirements and expectations of fellows was not clearly defined from the beginning. For example, the process and tools for creating, submitting, and validating metadata is very different from the full data submission process. As a new fellow to the program we could not decipher which tools and processes correlated to which submission. In addition, the NY submission system was the only mentioned tool however, CDC does provide support so fellows are left to burden NY with questions and training on that program.
- The IP-NCDM.msi program doesn't work and there is no way to troubleshoot it. Also, this program is listed as in testing phase,

*"This tool is in testing phase and user takes full responsibilities of their hardware, software and data. Programmer/provider of this tool and associated program is not responsible for any damage to your hardware, software or data."*

However, no alternative to using this program is provided to fellows.

- The timeline offered for this fellowship is not in line with the time and effort required. We would recommend the metadata window be moved to the beginning of May allowing the rest of May and all of June open to work with CDC to correct validation errors. We found at least four weeks needed to identify the errors, make corrections to the thousands of files and resubmit. We would then recommend fellows begin creating full submission files in July for a September submission window. Thereby leaving the rest of September and October to identify errors, make the corrections and resubmit.

## **Phase II and Tracking Fellowship Summary**

Phase's I and II of the ASTHSO tracking fellowship provided RI with a unique opportunity to learn about the National Tracking Program and provide NCDMs to CDC NEPHNTN. Throughout this fellowship RI was able to experience the level of time and effort needed to create and submit data files to CDC. Data acquisition and creation was a wonderful experience teaching us about creating metadata files, the submission process, and the schema used by CDC for NCDMs. This information is imperative to developing a successful Tracking Program where many additional NCDMs are used.



Furthermore, the RI tracking fellowship program learned many lessons on the amount of internal support needed to successfully meet identified deliverables. For example, throughout Phase I and II we experienced many frustrations when attempting to work with internal staff obtain necessary documents and support. Specifically, legal staff within the Department of Health were not able to develop and approve a DUA within the 10-month fellowship window. Serving as a liaison between internal legal staff and CDC legal staff proved cumbersome and inefficient. Although it may not be necessary for all fellows, having federal legal staff work directly with state/city legal staff may be more appropriate as program staff do not have authority to approve such agreements.

The RI tracking fellowship will take what we have learned from these experiences and work on solutions to prevent future hold-ups. In addition, RI now has a more holistic understanding of what it takes to be a CDC NEPHTP which is imperative to being a successful state-wide tracking program.

### **Future Plans and Program Sustainability**

Beyond contributions to the NEPHTN through ASTHO's Peer-to-Peer Fellowship Program, RIDOH plans to develop, implement, and maintain an EPHTN for the state of Rhode Island. A state network will utilize integrated environmental health data to obtain information in support of activities that improve the health of communities. A RI EPHTN will also advance state and local public health capacity in the area of environmental health surveillance, develop state EPHTN portals, and provide Nationally Consistent Data and Measures (NCDMs) to the National Tracking Network.

Through an EPHTN in RI, RIDOH will work with CDC and data partners to improve existing tracking data and develop new NCDMs that may be adopted by CDC. RIDOH will maintain existing required NCDMs and data flows to CDC and ensure the availability and accessibility of data for development and reporting of these NCDMs on environmental hazards, exposures and health effects, and other jurisdictional priorities.

In addition, Rhode Island has a history of strong regional collaboration with our neighboring states. Through the support of each other's commitment to public health, New England has led the way in public health prevention of disease, morbidity, and mortality. By participating in CDC's NEPHTN Rhode Island will join its fellow northeast Environmental Public Health Tracking Programs making New England the first region in the country to have fully implemented EPHT Programs.



**Appendix A**  
**Rhode Island Data Use Agreement**



Department of Health

Three Capitol Hill  
Providence, RI 02908-5097

TTY: 711  
[www.health.ri.gov](http://www.health.ri.gov)

### Data Use Agreement: RI Hospital Discharge Data

In this agreement, the person or organization acquiring the data is referred to as the "Recipient." The Recipient provides the following attestations with respect to the use of Rhode Island Hospital Discharge

Data:

- 1) The Recipient will not release any patient-level data or individual patient records or any part of them to any person who is not a subcontractor or employee to the Recipient;
- 2) The Recipient will not attempt nor permit others to attempt to identify individuals;
- 3) The Recipient will not attempt nor permit others to attempt to link the individual records of patients in this data with any other individual level data from any other source;
- 4) The Recipient will adhere to the data protection methods described in the National Environmental Health Tracking Network Data Re-release Plan, Version 2.5, June 20, 2008;
- 5) The Recipient will not copy, sell, rent, license, lease, loan or otherwise grant access to the individual record level data covered by this Agreement to any other person or entity;
- 6) The Recipient will make no statement nor permit others to make statements indicating or suggesting that interpretations drawn from the data are those of the Rhode Island Department of Health;
- 7) If cited in a publication or presentation, the source of the data shall be acknowledged as the Rhode Island Hospital Discharge Data Set, Rhode Island Department of Health;

This agreement pertains to the following:

Data type: IP and ED (IP or ED) Time Period: 2000-2013 (If applicable)

\_\_\_\_\_  
Recipient Organization Name

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Address

\_\_\_\_\_  
Fax

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Organization Web Address

\_\_\_\_\_  
Recipient Representative Name & Title (print)

\_\_\_\_\_  
Email address

Recipient has the authority to enter into this Agreement and agrees to abide by all provisions set out in this Agreement, as indicated by signing below:

\_\_\_\_\_  
Recipient Representative Signature

\_\_\_\_\_  
Date