

**ENVIRONMENTAL PUBLIC HEALTH TRACKING  
ASTHO FELLOWSHIP REPORT**

Submitted by

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**Submitted to**

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

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## **INTRODUCTION AND BACKGROUND**

In December of 2014, the Alaska Division of Public Health's Section of Health Planning and Systems Development was one of five states selected for the Association of State and Territorial Health Officials (ASTHO) Environmental Public Health Tracking State-to-State Peer Fellowship Program. The purpose of this program was to work with states to prepare and submit inpatient and emergency department data to the Centers for Disease Control and Prevention (CDC)'s Environmental Public Health Tracking Network (EPHTN). The data were to be extracted from the Alaska Hospital Discharge Data System to provide EPHTN researchers, grantees, other public health professionals, and the public with summary information on hospital visits for certain environmental health indicators.

The Alaska Hospital Discharge Data System contains inpatient data for the years 2001 through 2012 and outpatient data for the years 2008 through 2012, though not all Alaska hospitals reported for the whole period and reporting was voluntary. Many analyses have been performed on these data, largely in response to particular health surveillance questions and to ascertain more about hospitalizations related to a certain diagnosis or indicator, such as asthma. Participation in this fellowship marked the first use of the Hospital Discharge Data System to contribute longitudinal public health data to a national environmental tracking database for public health research. Use of the data is constrained to studies of a public health nature and the data were not to be linked with any data that may result in the identity of an individual.

Alaska's participation in the Association of State and Territorial Health Officials fellowship with Centers for Disease Control and Prevention's Environmental Public Health Tracking Network, has been beneficial already. There is increased awareness of the dataset and its public health uses, and less than a week after the data were submitted, an inquiry was received from an epidemiologist in another section of our department. Having environmental health data more widely available allows for broader analyses by specific criteria, such as myocardial infarction by rural region. Moreover, with Alaska's data now in the national dataset, the environmental health of Alaskans can factor into studies about the country as a whole.

Health Planning and Systems Development staff gained an understanding of the formal process of submitting specific longitudinal data to a national dataset, including associated metadata. Staff also solved technical challenges related to moving the data from its native dataset environment to extensible markup language (XML), and loading and running the initial data checking software.

Of significance for the Environmental Public Health Tracking Network is a growing dataset that includes new state participation and is therefore more representative of the nation as a whole. Researchers can now find Alaska data in this national data repository where it is catalogued by metadata and readily available for analysis and assessment of health condition. These analyses can be used to guide public health policy and budgetary decision making, as well as to increase the corpus of knowledge about these public health indicators.

## **ACTIVITIES**

The collaborative process of Health Planning and Systems Development staff working closely with CDC staff involved regular email communication and occasional telephone calls, and

resulted in on-time data submission. CDC staff provided guidance and answers concerning documentation, metadata submission, data formatting, submission, and correction. Alaska participated in all webinar and teleconference meetings and training offered to the fellows, in addition to individual communications with CDC staff. With the knowledge gained from working with CDC staff and the experience acquired during the conversion of our data from one format to another, Alaska was able to share with staff from Rhode Island information about a procedure to convert the data to XML. Alaska and Rhode Island staff emailed, talked by phone, and met in Adobe Connect for knowledge sharing.

The data preparation process started with the Alaska Hospital Discharge Data System. Extract datasets were run and formatted to the specifications in the Environmental Public Health Tracking Network Inpatient and Emergency Department Data Dictionaries. Metadata specifying data file contents and constraints were created for 63 data files for four inpatient health indicators and three emergency department health indicators.

<b>Inpatient Indicators</b>	<b>Emergency Department Indicators</b>
Asthma	Asthma
Myocardial infarction	Carbon monoxide poisoning
Carbon monoxide poisoning	Heat stress
Heat stress	

For the process of data validation, upload, and submission, data and schemas were loaded into spreadsheets and 57 extensible markup language files were exported; 57 files because some years did not have data for two of the health indicators. Spreadsheets were used in the conversion process because the New York SAS program did not operate on local machines as designed. The DIVE tool was run on all files prior to the initial upload to help find and correct preliminary errors, and all files were zipped and uploaded to the SAMS test environment.

Corrections were made as necessary from notifications sent to email, though the DIVE tool was not utilized on corrected files prior to resubmission because it did not capture the errors the first time. Following the technical guidance of CDC’s contractor, extensible markup language files were edited to remove extraneous characters introduced when exporting files from spreadsheet software. Two character patterns were removed: “1ns:” from the header section and “ns1:” from the dataset section. Corrected files were zipped and resubmitted to the test environment.

If subsequent email notification indicated the file uploaded successfully to the test environment, the file was then uploaded to the production environment. If the file did not upload successfully to the test environment, the errors specified in the email notification were researched, corrections were made, and the file was zipped and resubmitted to the test environment. This process was repeated until all files submitted to the test environment generated email notification of successful upload. The files were then uploaded to the production environment.

After successful submission in the production environment, CDC’s data contractor analyzed the files and noted necessary changes. Files needing amendment were changed, uploaded to the test environment, and run through validation edits. If the email notification indicated the file verified

without errors, then it was uploaded to production. If not, errors were researched and the file was resubmitted to test, then production.

## **RECOMMENDATIONS**

Plans for participation in the fellowship were made based upon a cursory understanding of the data preparations requirements described in the call for proposals. Because technical specifications were shared after acceptance into the program, staff underestimated the resources necessary to complete the activities required of the fellowship. Going forward, the inclusion of technical requirements in grant proposal requests would assist agencies in assessing their personnel and technological investment.

The conversion of Alaska's data to extensible markup language was time consuming because New York's SAS program did not run on our local computers, necessitating a number of extra technological steps to generate files and then edit by hand as needed. The data dictionaries and health characteristic specification files would be requested early in the process in future applications. Additionally, organization of the documents on the EPHTN SharePoint site by specific project and an index of relevant files would be helpful steps. Tabular presentation of all admission-related data items would further clarify the process.

## **FUTURE PLANS**

Alaska's inpatient and outpatient data collection has transitioned from a voluntary program to a mandated reporting program beginning with 2015 data. While Alaska does not have current plans to continue submission of data to the EPHTN, as 2013 and 2014 data years had limited participation from hospitals, further participation in environmental health tracking will be considered as the 2015 data come online.

## **CONCLUSION**

As a fellow for the Peer-to-Peer Fellowship Program, Alaska contributed on-time metadata and inpatient data for asthma, myocardial infarction, carbon monoxide poisoning, and heat stress, and emergency department data for asthma, carbon monoxide poisoning, and heat stress to the Environmental Public Health Tracking Network. Alaska's participation in data sharing with CDC through this Association of State and Territorial Health Officials fellowship marks the first time the Alaska Hospital Discharge Data System data have been represented in national datasets specifically for health surveillance.