

**ENVIRONMENTAL PUBLIC HEALTH TRACKING  
ASTHO FELLOWSHIP REPORT**

**Submitted by**

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## **INTRODUCTION**

This report is a follow-up to the Phase 1 project report submitted to the Association of State and Territorial Health Officials on July 16, 2014. The Hospital Discharge Data Submission project for members of the Environmental Public Health Tracking Fellowship began in February 2014, when the Association of State and Territorial Health Officials awarded funds to several state health agencies to acquire and submit hospital discharge data for four health outcomes (asthma, carbon monoxide poisoning, heart attacks, and heat stress illness) to the National Environmental Public Health Tracking Network.

As a member of the Fellowship, the state of Kentucky has already made significant progress in establishing an Environmental Public Health Tracking Program, including the submission of community Drinking Water Data to the national tracking program for publication on the national tracking portal. By submitting Hospital and Emergency Department data to the network, Kentucky would complete all the Nationally Consistent Data and Measures required by the national tracking program with the exception of the Birth Defects content area. Making this data available on the national tracking portal will help decision makers in Kentucky take the necessary steps to improve the state's high rate of preventable disease and reduce the years of potential life lost.

## **SUMMARY OF PHASE 1 PROJECT ACTIVITIES**

The project was first proposed during a meeting of the ASTHO Fellowship members at the Centers for Disease Control and Prevention in Atlanta, Georgia in August 2013. Kentucky was accepted into the Non-Funded State/Territorial Health Agency Participation in the Submission of Hospital Discharge Data to the CDC National Environmental Public Health Tracking Network project in February 2014. The first phase of the project, which included continuing the relationship with our tracking mentor state of Florida, developing a Data Sharing Agreement with the Office of Health Policy where the hospital inpatient and outpatient database is maintained, previewing and downloading the IP and ED NCDM tools containing the SAS programs for data processing, and the initial submission of the metadata files, was completed by June 30<sup>th</sup> 2014. Participation in all of the scheduled conference calls and the inclusion of the Kentucky EPHT Workgroup were also vital to the successful completion of the initial phase of this project. The principal investigator for the project was able to provide insight to the other fellowship members when requested because of Kentucky's experience with submitting drinking water data to the national tracking portal. The Principal Investigator established access to the Share Point website and the Secure Access Management System during the previous data calls, so it was not necessary for Kentucky to request access to these tools for this project.

## **PHASE 2 PROJECT ACTIVITIES**

### **Metadata Correction and Resubmission**

All the metadata files submitted during the initial submission period at the end of June were failed in the initial QA process. Additional information was needed in the Completeness Report and Entity and Attribute sections of the metadata files. The Completeness Report was amended to include the ICD-9 codes of the content area and to specify that residents of other states and federal facilities were not included in the data file. The Range of Dates for the Heat Stress Hospitalization and Emergency Department metadata files had to be corrected to include only the months of May through September for each year. Specific data elements for the content areas were added to the Entity and Attributes section of the files. All metadata files were corrected as specified in the highlighted directions provided by the approvers in the Metadata Creation Tool. The resolution "all suggested edits made" was added to the first screen, and each record was resubmitted via the Secure Access Management System. All Metadata files passed the QA process and the required Metadata Creation Numbers were received by July 22<sup>nd</sup>, 2014.

### **Kick-Off Conference Call**

The second phase of the project began with a webinar on July 23<sup>rd</sup>, 2014. The main topics of the call were Metadata Delivery, Data Submission and Validation, Available Tools and Technical Support, and the timeline for the remainder of the project activities. The Principal Investigator for Kentucky participated in this call.

### **Tracking Workshop in Atlanta**

The participating states were invited by ASTHO to use project funds to attend the national Environmental Public Health Tracking Workshop at the Sam Nunn Federal Building in Atlanta, Georgia, August 18<sup>th</sup> to August 20<sup>th</sup>. All the participating states, including Kentucky, were able to send representatives to the Workshop. The ASTHO fellows met together during the conference with Ify Mordi to discuss the progress of the project and the final steps of data submission. During the workshop, it was announced that Kentucky and Michigan had been accepted by the National Environmental Public Health Tracking Program as new members. Colleen Kaelin, the Kentucky representative to the workshop, attended the PI Strategy Discussion of tracking content priorities for program members. The presentations from the workshop are now available on the EPHT Share Point website.

## **Data Formatting and Upload**

The raw data was received from the Office of Health Policy at the end of the first phase of the project on June 30<sup>th</sup>. It was necessary to convert the files from SPSS to SAS format in order to use the IP NCDM and ED NDCM data tools. Data elements in the files were reformatted when necessary to match the requirements of the SAS programs. Specifically, the County data element had to be converted from a 5 digit format that included the 2 digit state FIPS code to the 3 digit county code only. Other data elements, such as patient birth date, race, and ethnicity, were excluded from the SAS data tools because they were only available for the latter years of the data set. The separate content area files with annual data were combined into two large files-one inpatient data file and one outpatient file, which were then run through the SAS programs contained within the two data tools to generate the necessary XML files. A total of 52 inpatient files and 39 outpatient files were generated by the two SAS programs, with 4 inpatient content areas and 3 outpatient content areas. The structure of the files was checked against the schema provided in the Share Point website to ensure that the data elements were complete and in the proper order. The DIVE 3.0 tool was downloaded from the SharePoint website, and the XML output files were validated using the tool.

After validation, the XML files were submitted to the tracking network through the Secure Access Management System beginning August 13<sup>th</sup>, 2014. Correction of the Metadata Creation Numbers was necessary for the Heat Hospitalization data files, which were resubmitted successfully. All data content areas for the project were submitted and accepted by August 14<sup>th</sup>, 2014.

## **Data Validation and Resubmission**

The initial validation report was received on August 28<sup>th</sup>, 2014. Clarifications were requested for all data content areas except for Asthma Hospitalization and Asthma Emergency Department data. The clarifications were centered on the Cause of CO Hospitalization for the CO Hospital content area, the wide range in the number of counties and age groups reported for the Heat Stress and MI Hospitalization content areas, and the ratio of male to female cases reported for both the Heat Stress Hospitalization and Emergency Department data files. After consulting with the data steward and reviewing the data files, the Principal Investigator re-ran the CO Hospitalization data files through the IP NCDM SAS tool and resubmitted the XML output files through the Secure Access Management System on September 5<sup>th</sup> after validating the new files with the DIVE 3.0 tool. Further examination of the other content areas confirmed that the CO ED and MI Hospitalization data files were correct as submitted. Although the disparity in the ratio of male/female cases for the Heat Stress Hospitalization and Emergency Department data files was consistent with data from other grantee programs, the Heat Stress

inpatient data files were run through the IP NCDM SAS tool again, and the files were resubmitted on September 29<sup>th</sup>, 2014.

The most difficult challenge of this phase of the project was the lack of direct participation by the data steward in the formatting and validation of the data files. Staffing changes in the Office of Health Policy complicated the issue of contact between the Principal Investigator and the data shareholder representative. Only one individual in the Office of Health Policy was involved in the collection and transfer of data to the Principal Investigator. This same individual transferred from the Office of Health Policy to another position in state government around the time the data files were initially submitted to CDC. Although this person did briefly review the initial validation reports from CDC, the lack of direct involvement by the data shareholder made the process of data validation difficult.

## **CONCLUSION**

### **Summary of Project**

The Submission of Hospital Discharge Data to the CDC National Environmental Public Health Tracking Network project has been concluded successfully by the Kentucky Environmental Public Health Tracking Pilot Program. The necessary data elements of the Hospital Discharge and Emergency Department content areas were acquired from the Office of Health Policy in the Cabinet for Health and Family Services, and the data was formatted, validated and submitted using the tools made available from the national Environmental Public Health Tracking Share Point website.

The lessons learned in the course of completing this project involved securing the cooperation and continued involvement of the data steward and becoming familiar with the formatting procedures for this specific content area. The data steward representatives expressed concern about the security and confidentiality of the data, and the cooperation of the Cabinet for Health and Family Services' Institutional Review Board and the Office of Legal Services was crucial to assure the data stewards that: (1) the submission of de-identified aggregated data to the national tracking network did not constitute research and (2) the submission of de-identified aggregated data to the network was acceptable under state and federal regulations. Miscommunication about the years of data available for the outpatient data caused a delay in the metadata submission. Although the previous experience of the project lead in creating metadata and transmitting community drinking water data was helpful in many ways, the specifics of each content area are very different.

## **Future Plans**

As a newly funded member of the Environmental Public Health Tracking Network, Kentucky is definitely making plans to sustain and expand tracking activities. The initial phase of the Kentucky tracking program will involve completing all the Nationally Consistent Data and Measures required by the national tracking network. Our Commonwealth Office of Technology will collaborate with the University of Maryland, the IT contractor for the Maryland tracking program, to build the necessary infrastructure to format and transmit data from our data shareholders to the national Environmental Public Health Tracking Network. New staff members will be hired under the terms of the grant to lead the Kentucky tracking program. Specifically, a full-time Program Administrator and a full-time Data Coordinator will be hired, and a part time Information Technology Specialist will be designated to work with the University of Maryland IT staff.

The Kentucky Environmental Public Health Technical Advisory Workgroup will continue to meet regularly and will be actively involved in building the new state tracking program. The Workgroup will expand to include other academic and community partners, such as the Foundation for a Healthy Kentucky and Schools of Public Health. All Memorandums of Agreement, Memorandums of Understanding, and Data Sharing Agreements needed to ensure access to all the data elements required to complete the NCDMs for display on the national tracking portal will be completed in the first year of funding. A Tracking Communication and Outreach Program for the state of Kentucky will be developed during the first fiscal year of the grant period. Also, a program evaluation plan will be developed and implemented under contract with University of Kentucky's Population Health Institute.

During the second project phase, the Commonwealth Office of Technology and the University of Maryland staff will work to develop the Kentucky Environmental Public Health Tracking public access and secure web portals using the standards and recommendations of the national tracking program. The Technical Advisory Group will develop state-specific indicators and measures for the Kentucky tracking portal and successfully collect data and transmit all new indicators and measures adopted by the national tracking content workgroup. Representatives of the Kentucky tracking program will participate in all conference calls, webinars and workshops as scheduled by the national tracking staff.

The third and final phase of the establishment of an Environmental Public Health Tracking Program in Kentucky will include the analysis and dissemination of tracking data. Baseline web statistics on the use of the state and national tracking portals by Kentucky residents and researchers will be collected and the results of the analysis made available to program evaluators, national tracking staff and the general public. Kentucky tracking data will be analyzed for spatial and geographic trends and for disparities in health conditions and exposure

to environmental hazards in our state. We will also strive to inform key health decision makers, health care providers, and local public health staff about the availability and use of tracking data. We will encourage state, regional, and local public health staff to complete the EPHT 101 online course, as well as training in Risk Communication, Geographic Information Systems, and other issues related to Environmental Public Health Tracking. The collection and submission of all Nationally Consistent Data and Measures to the National EPHT program will continue throughout the grant period.

## **RECOMMENDATIONS**

Kentucky's participation in the Association of State and Territorial Health Officials' Environmental Public Health Tracking State-to-State Peer Fellowship has been a vital step in our state's journey to becoming a member of the Environmental Public Health Tracking Network. Our mentor tracking program in Florida provided crucial information on the formation of an Environmental Public Health Tracking Workgroup, how to communicate with data shareholders, templates for Data Sharing Agreements, and the Information Technology requirements of sending the data elements of the Nationally Consistent Data and Measures to the national tracking network. The national tracking staff helped to provide access to the Share Point website, with all the tools, computer programs, and templates needed to format and submit tracking data, and to the Secure Access Management System. The guidance of the national staff and of tracking staff in other states in creating and submitting metadata and using the data formatting programs available on the Share Point website also helped to make completion of the Drinking Water and Hospital Data content areas for Kentucky possible. Most important of all, however, was the active participation and cooperation of the data steward in providing the raw data elements and working with the principal investigator on the data validation process. Insufficient communication with the data steward made formatting the data elements and reviewing the validation reports for this content area much more difficult.

There are now only eight states that are neither members of the Environmental Public Health Tracking Network nor the ASTHO Peer Fellowship Program. The next step of the Fellowship program should be to contact the health departments of these jurisdictions directly to offer information and support for environmental public health tracking. Even those jurisdictions not yet funded by the national tracking program have experienced great success in building their capacity to track, report, and link data on environmental hazards, exposures, and related health conditions through the ASTHO EPHT Peer Fellowship Program. Environmental Public Health Tracking is the most important resource to provide information we need to reduce preventable chronic disease and the years of potential life lost in the 21<sup>st</sup> century.

## REFERENCES

### 1. National Environmental Public Health Tracking Network

<http://ephtracking.cdc.gov/showHome.action>.

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