

## **Background Description and Learning Experience**

The Commonwealth of Kentucky is planning to implement an Environmental Public Health Tracking Network as part of the national EPHTN. Establishing a Kentucky EPHTN will enable the public to become educated about the risk of environmental hazards and allow researchers to examine the link between exposures and health outcomes in Kentucky. Becoming part of the national network will also allow us to compare the burden of environmentally related disease in Kentucky with other states and the nation as a whole. Kentucky has all the components necessary to participate in the EPHTN, including a state cancer registry that is part of the national Statistics, Epidemiology and End Results (SEER) program, a birth defects surveillance program, a child lead poisoning prevention program, a poison control center that keeps statistics on CO poisoning, and a state asthma partnership. Also, the Department of Environmental Protection has air and water quality monitoring data.

Currently there is no infrastructure in Kentucky to examine the link between environmental exposures to chemicals such as sulfur dioxide, nitrogen dioxide, particulate matter and mercury with health effects such as asthma, chronic obstructive pulmonary disease and lung cancer. The surveillance systems for chronic diseases are completely separate from environmental data such as air and water quality monitoring. Tracking for risk factors such as housing age and absence of carbon monoxide detectors is limited. A Kentucky EPHTN would be an invaluable asset to establish, mitigate and prevent the environmental causes of chronic diseases in our state.

### **National Environmental Public Health Tracking Conference – April 2010**

#### *Background*

Ms. Kaelin attended the National Environmental Public Health Tracking workshop in New Orleans April 26-29, 2010. This trip was part of the award given by the ASTHO state-to-state peer fellowship program. Representatives from unfunded states were given the opportunity to meet with representatives from their assigned grantee mentor states. Kentucky was assigned to the Florida Department of Health's EPHT Program.

#### *Learning Experience*

The transition from a Secure Data Network to a Secure Access Management System was discussed at the workshop. The process by which member states create and submit Metadata was also discussed, as well as new online tools for small area statistical analysis. The Rapid Assessment and Characterization of Environmental Risks (RACER) tool developed by the University of Pittsburgh Academic Consortium for Excellence in Environmental Public Health Tracking was presented by Dr. Gary Marsh. The purpose of this tool is to assist public health officials investigating clusters of disease suspected to be linked to environmental exposure. Examples of cluster investigation using three possible scenarios were reviewed. The Metadata Creation Field Guide was distributed to conference attendees.

## **Host State Site–Visit – May 2010**

### *Summary*

Ms. Kaelin visited Florida from May 26 to 27, 2010. The visit was well planned by the Florida DOH Environmental Public Health Tracking Program. All aspects of the EPHT Program were presented and discussed. Dr. Carina Blackmore welcomed Ms. Kaelin and introduced her to other members of the EPHT program staff. On the first day of the visit, Chris DuClos gave an overview of the EPHT Program including the Data Sharing Agreements used by the Florida EPHT Network. Various presentations were made by Florida EPHT staff and their collaborators. Presentations and discussions included the following:

- Florida EPHT Program and Web Portal
- Discussion of Data Sharing Agreements
- Power Plants and Air Quality Data in Florida
- Analysis of Hospital Data in Florida
- Discussion with Asthma Control Program
- Program Marketing and Risk Communication
- Metadata Creation and Submission
- IT Issues/Portal Standards
- PHIN MS & Data Integration
- Portal Development and Mapping Application

### *Application of What Was Learned*

On June 29<sup>th</sup>, Ms. Kaelin presented an overview of the National Environmental Public Health Tracking Network, the lessons learned from the Florida site visit and an implementation plan for the Kentucky EPHTN to the Kentucky Data Users Workgroup. The workgroup members will continue to receive updates and provide input into the development of Kentucky's network. When the Kentucky EPHT workgroup is formed, the templates for data sharing agreements and other documents reviewed during the Florida site visit will be used as the foundation for formalizing the data collection process for EPHT in Kentucky. Lessons from the site visit will also be used to market EPHT to Kentucky legislators, lobbyist and public health officials. The presentations by John Folsom and Jim Zhang will be used as a model for database management and information technology infrastructure for the Kentucky EPHTN. Information provided during the Florida site visit will also be used as a model for information transfer to the national network and for the development and submission of metadata.

### **Planned Activities**

Ms. Kaelin will initiate the formation of the Kentucky Environmental Public Health Tracking Workgroup. The workgroup will consist of representatives from all potential data stewards related to the Nationally Consistent Data and Measures (NCDM), including: the Kentucky Department for Public Health, the Kentucky Department for Environmental Protection, the Kentucky Cancer Registry, and the Kentucky Regional Poison Control Center, along with the three universities with schools of public health. In addition, a Legislative/Risk Communication

liaison and an Information Technology (IT) representative will be sought. Three Kentucky Universities with accredited school of Public Health (University of Kentucky, University of Louisville, and Western Kentucky University) will be invited to participate in the workgroup. The first goal of the workgroup will be to prepare for the next EPHTN Request for Application announcement from CDC. In addition, the workgroup will begin collecting data as specified in the NCDMs for submission to the EPHTN Secure Access Management System. The IT representative will research what infrastructure, software and hardware will best serve to build the Kentucky EPHT public and secure web portals and the secure database needed to store and transmit data to the national network.

The Kentucky Environmental Public Health Tracking Workgroup will aim to develop a web-based public health query system similar to the Florida Community Health Assessment Resource Tool Set (CHARTS). The results of the pilot project will be incorporated into future research. Kentucky will consult with the Florida EPHT team during all phases of the formation of the Kentucky EPHTN.

## **Pilot Project**

### **Abstract**

The Division of Public Health Protection and Safety will conduct a pilot project that will examine the levels of three criteria air pollutants and mercury to see if those pollutants are linked to significantly higher levels of chronic respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD) and lung cancer. The EPA has developed a list of six commonly found air pollutants defined as “criteria pollutants” because they are found all over the United States and have the potential to harm public health. The list included particulate matter, sulfur dioxide, nitrogen oxides, ozone, carbon monoxide, and lead. The data will be collected for the time period of 2000 through 2007 and will be collected by Area Development District. Kentucky’s 120 counties are divided into 15 Area Development Districts (ADDs): Barren River, Big Sandy, Bluegrass, Buffalo Trace, Cumberland Valley, Five County (FIVCO), Gateway, Green River, Kentucky River, Kentuckiana Regional Planning and Development Agency (KIPDA), Lake Cumberland, Lincoln Trail, Northern Kentucky, Pennyriple, and Purchase. Population data, along with ambient air levels for sulfur dioxide, nitrogen dioxide, particulate matter 2.5 microns or less and mercury-the pollutants most closely linked to the types of industrial activity found in Kentucky, will be collected by ADD. The air quality data will be linked with ADD health outcome data on age adjusted rates of hospitalization for asthma and chronic obstructive pulmonary disease as well as age adjusted rates of lung cancer incidence. To control for possible confounders, data on the percentage of current smokers per ADD and the average radon levels for the time period in question will be included. The sources of data for this study include the Kentucky Department for Public Health, the Kentucky Department of Environmental Protection and the Kentucky Cancer Registry.

### **Specific Aims**

The specific project objectives are to: 1) determine if the level of criteria air pollutants per ADD in Kentucky are associated with the prevalence of chronic respiratory disease for the period of

2000-2007 and 2) compare the average percentage of current smokers per ADD -or average levels of Radon for the period of 2000-2007- with criteria air pollutants and chronic respiratory disease in Kentucky.

### **Benefits and Significance to Kentucky and EPHTN**

The results of this project will be used to demonstrate the benefits of EPHT to legislators, policy makers, and other stakeholders to garner support for the construction of the Environmental Public Health Tracking Network (EPHTN) in Kentucky. Kentucky is one of several states in the Southeast region of the U.S. that is not currently an EPHTN grantee. The national EPHTN would benefit from having more states in the Southeastern region enrolled in the program.