

# **Environmental Public Health Tracking: Facilitated Discussions with County Health Departments and Data Partners Conference Summary**

## **Sponsored by:**

**Florida Department of Health, Division of Environmental Health  
National Association of City and County Health Officials  
Association of State and Territorial Health Officials**

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## **Welcoming Remarks**

Dr. Lisa Conti, Director, Division of Environmental Health welcomed the participants to the Environmental Public Health Tracking Conference. Participants at the meeting, included staff from the Florida Department of Health, Centers of Disease Control and Prevention (CDC), Association of State and Territorial Health Officials (ASTHO), National Association of City and County Health Officials (NACCHO) and local public health leadership. Dr. Conti expressed her gratitude for the presence of an excellent group of individuals at the meeting which she referred to as a “brain trust” that could provide great insight into the facilitated discussion on Tracking. She echoed the views of Dr. Ana Viamonte Ros, Secretary of Health and Surgeon General of Florida and her commitment to the three “P’s: Prevention, Preparedness and Personal responsibility” which fits in to the work on Environmental Public Health Tracking (EPHT). She hoped the discussion and the information gathered at the meeting would enrich the process and lead to a positive impact on public health.

## **Introductions**

Mr. Tom Dunlop, Dunlop Environmental Consulting Inc, introduced himself and briefly explained his role as the facilitator for the meeting. Adam Reichardt, ASTHO, Michelle Chuk, NACCHO, and Rosalyn Bell, CDC, introduced themselves and the staff from their respective organizations. All expressed their excitement in participating in the meeting and the benefits to be gained from the launch of the EPHT network. After brief introductions from all the participants, the group turned its attention to the presentations by CDC and the Florida Department of Health.

## **Environmental Public Health Tracking: The National Perspective, Vision and Mission**

Rosalyn Bell, Project Officer for Florida at CDC's Environmental Health Tracking Branch, introduced herself and began her presentation which focused on the overview of Environmental Public Health Tracking program from a national perspective. She explained how the environment plays an important role in human development and how there are few systems that exist at the state or national level to track many of the exposures and health effects that may be related to environmental hazards. Ms. Bell talked about the Institute of Medicine (IOM) and Pew foundation reports that provided the impetus for Congress to provide funding for EPHT.

Ms. Bell stated CDC's Tracking program mission "to provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities." She explained that Tracking at a glance involves "web based information systems that exist at the local, state and national levels, it provides access to the nationally consistent data and indicators of environmental health status, serves the environmental public health agencies, health care providers and researchers and it protects privacy of individuals."

Ms. Bell outlined the five goals of the EPHT program:

1. Build a Sustainable National Environmental Public Health Tracking Network
2. Enhance Environmental Public Health Tracking Workforce and Infrastructure
3. Disseminate Information to Guide Policy, Practice, and Other Actions to Improve the Nation's Health
4. Advance Environmental Public Health Science and Research
5. Foster Collaboration Among Health and Environmental Programs

Ms. Bell gave an overview of the program's accomplishments from 2002 to 2006. Twenty-four state and local programs were funded by Congress to carry out environmental and public health capacity building/ and or demonstration projects that resulted in the completion of thirty-eight public health actions. "These public health actions have lead to the prevention or control of adverse health effects from environmental exposure." Ms. Bell outlined some key lessons learned:

- Stakeholder engagement
- Linking people, program and resources
- Successful data sharing
- Policy and regulatory changes that are required
- Data enhancement and harmonization is necessary
- Level of complexity: Surveillance vs. Research
- Varying levels of readiness
- Communication

Ms. Bell talked about setting priorities for the EPHT network and meeting standards established by CDC since the inception of Tracking. In August of 2006, CDC funded sixteen states and one locality through co-operative agreements under their request for application. Ms. Bell stated that Florida is one of the funded states that has accomplished a lot with its Environmental Public Health Tracking Program

## **EPHTN Florida: Progress to Date/Partnerships**

Dr. Greg Kearney, Principal Investigator, EPHT program, Florida Department of Health, introduced himself and began his presentation which focused on the progress of the Environmental Public Health Tracking program from Florida's perspective. He talked about Environmental Health being on the tipping point and the challenges and future of Tracking and the need to focus on it from a national as well as a local level. He stated that the objective for the meeting is "to examine how Environmental Public Health Tracking can function effectively for users in local health departments and their communities." Dr. Kearney gave an overview of environmental hazards and health outcomes and the existence of environmental health gaps that resulted in the establishment of the federally funded Environmental Public Health Tracking Program. According to Dr. Kearney, the program focus was initially on chronic disease but now the program has expanded to include the "Built Environment and how it relates to obesity, Global Climate Change and how it relates to certain health outcomes, Mercury level and fish consumption among other issues."

Dr. Kearney talked about the core health outcomes that CDC tasked States to work on:

- Asthma
- Myocardial Infarction (MI)
- Birth Defects
- Childhood Lead levels
- Selected cancers
- Air quality data: ozone and particulate matter (PM)
- Drinking water: Arsenic, Trihalomethanes, Nitrates, Lead
- Carbon monoxide (CO) poisoning

Dr. Kearney acknowledged the efforts of various partner organizations, the Agency for Health Care Administration (AHCA), the University of Miami, University of Florida and the Department of Environmental Protection (DEP) that helped in developing the EPHT program in Florida. He discussed the data linkage projects started by the Florida EPHT program in 2004. Examples of these data linkage projects included the collaboration with the Department of Psychology, University of Miami. This project looked into developmental disabilities in children and their association with childhood lead. A computer algorithm was developed to model the data linkage project; results indicated that there were increased odds ratios in some developmental disabilities (mental retardation, learning disability, and speech and language impairment). This was the largest data linkage project that involved developmental disability data and biomarker data.

The second data linkage project was an air quality project in collaboration with AHCA, DEP and the University of Florida. The research question that the project was looking into answer: “Are higher levels of ozone and PM associated with increased hospital visits for asthma and MI.” Interpolation maps and animated maps were developed by DEP to report on ozone and particle pollution levels across the state of Florida ([Air Quality Animated maps](#)). This data on ozone and PM were linked to asthma and hospitalizations data and the University of Florida created a geographic weighted regression model adjusted for various covariates (socio-economic status, education etc.) The resulting product was a map of Florida across various timelines showing relative risks in different counties in Florida.

The third data linkage project involved selected birth defects and proximity to National Priorities List (NPL) sites. The birth defect project focused on congenital heart malformations. The project involved collaborations with AHCA, University of South Florida and the Imperial College of London. A software tool called the Rapid Inquiry Facility/Tool was used to calculate the incidence and prevalence rates around the NPL sites. In closing, Dr. Kearney briefly pointed out that some indicators (hazard, exposure, health effects etc) for the Florida EPHT program are listed on the [Florida Charts](#) Website.

Chris DuClos, Program Manager, Florida Department of Health, introduced himself and began his presentation on Data, Indicators and Spatial Analysis (GIS) for Environmental Public Health Tracking. Mr.DuClos gave an overview of *Nationally Consistent Data* which include standardized, documented and pre-processed data organized for national EPHT efforts and then transferred to CDC through a secure mechanism.

The health outcome data he discussed included asthma, MI, selected birth defects, selected cancers, carbon monoxide poisoning, lead poisoning and vital statistics. The environmental hazard data he talked about included data on old housing and air quality among others. Mr. DuClos emphasized the importance of the national workgroups in the EPHT program which consist of subject matter experts and data experts who help in analysis and setting guidelines for environmental and health outcome data.

Mr.DuClos briefly defined *Indicators* as “a way to look at data in a way people can understand and answer questions on health outcomes.” According to Mr. DuClos, there are over seventy indicators that Florida is working on. He gave an example of lead screening indicators that look at risk populations at the zip code level or even risk factors that may be missing for lead. The end users of these data sets include the public, policy makers and researchers among others, there will be varying levels of access depending on the sensitivity of the data and the privileges assigned to the end user. The national and state web portals will go live in September 2008; Florida specific data will be available on the state portal.

Geographic/Geospatial Information System (GIS) tools are being used by the EPHT program to display tabular data in a visual manner that is easier to understand.

Mr. DuClos gave examples of how GIS tools like *ArcGIS* were used in Florida to analyze data and make spatial associations of health outcome data and environmental hazards at a county or zip code level. GIS tools were used in Florida to analyze carbon monoxide poisonings that were linked to power outages during the hurricane season in 2004 and 2005 and increased cases of asthma as a result of the wildfires in 2007.

## **Demonstration of the Rapid Inquiry Facility/Tool**

Mr. John Folsom, Database Manager, Florida Department of Health, introduced himself and began a demonstration of the Rapid Inquiry Facility (RIF). Mr. Folsom defined RIF “as a piece of software designed to rapidly assess questions regarding public health, RIF does disease mapping and risk analysis around environmental hazards.” According to Mr. Folsom, Florida, Utah and Washington State were among the first three states to test the usefulness of RIF in the EPHT program.

### *Disease Mapping*

Mr. Folsom used a subset of cancer data as an example to display disease mapping. He defined geographic areas by selecting tracts and resolution of the study area by selecting counties of interest. Lists of all tracts from the counties were displayed and the entire state of Florida was used as a comparison area. RIF can be adjusted for several covariates, ex. age, years, race, gender etc. Mr. Folsom selected one county of interest and looked at a specific cancer type and was able to visualize the data on relative risk of that cancer type per 100,000 by gender and then comparing it to the whole state of Florida.

### *Risk Analysis*

Mr. Folsom selected a subset of NPL sites in Florida as an example of an environmental hazard. With the RIF tool he then selected distance bands (radius in miles from the NPL site) to calculate risk analysis and used the whole state as a comparison. Health outcomes were displayed at the census tract level.

### *Participant-Questions & Answers on RIF*

- Could we use this tool for any part of Florida?  
Mr. Folsom explained that once all the data sets are entered, the RIF could be configured to use analyze data for any part of the state
- When will this tool be available?  
Mr. DuClos noted that the tool is ready as a “stand alone” piece but more data sets will be added to enhance its features. The tool will be used to analyze EPHT spatial data and will have most of its features ready at the time of the launch of the network in September, 2008.
- How close can you get to a NPL site (radius in miles from the NPL site)?  
Mr. Folsom explained that using that distance bands of half a mile radius could be selected using the RIF tool.

- When short distance bands are used would that skew statistical calculations because of smaller populations?

Mr.DuClos explained that there are features in RIF that help you look at population density and define population boundaries around an area to give more statistical weight to where a population is actually present.

### **Facilitated discussion: Potential benefits, needs, concerns or comments from County Health Departments and partners of the EPHTN Network**

- “This is an overwhelming project even with data on a few core health outcomes, there is a need to make sure the data is good and useful at the local level.”
- “This is a revolutionary process, lot of times data is sent to national agencies from the local level but then there is no feedback on the results, setting up an EPHT network will help locals in analyzing results and perform outreach activities and create a positive health outcome.”
- “I have a lot of data, but translating it is a whole another animal...I need the analysis people, we need to be proactive with the data we have.”
- The need to have technical assistance at the county level to use the tools that are provided and interpret data.
- There is a need to have a metafile in the Website that gives a case definition and better interpretation of the data for the end user.
- For the National Network there is going to be a metadata profile and content specific messages to better interpret the data.
- Liability issues with hospitalization data need to be addressed.
- Mobile populations are a concern especially with those who carry disease; this could lead to skewed statistics for health outcomes in a stable population, environmental public health tracking should look into ways to capture this demographic data.
- There are many GIS tools available at the federal level like *Geospatial Analysis Technology for Health and Environment Research* (GATHER), *EnvioMapper* that are similar to tools like RIF. “There is a need to standardize all these tools and build upon one tool like RIF rather than using all these different tools among different agencies...avoid the need to be going to three different Websites to analyze the same information.”
- “The Tracking mechanism could be used in the field of injury prevention....personal injury and traffic accidents.