

## 5.f. Recipient Activity f: Training/Tools for Surveillance and Related Issues

*Develop training tools and provide training to state and local staff on surveillance practices, environmental assessment, biomonitoring, evaluation, and risk communication in collaboration with Centers of Excellence for Environmental Public Health Tracking (Appendix III).*

### 5.f.1. Results and Accomplishments

Our activities related to training tools and conducting training are closely related to our capacity building activities which are described in SECTION 5.g - Recipient Activity g: Increasing Capacity to Implement EPHT on p99.

#### **Risk Communication Training for October 2004 CDC Grantee Workshop**

With support from Dick Tardif at the Oak Ridge Institute of Science and Education (ORISE), our health education staff organized and conducted a risk communication and public participation training at the October, 2004 Grantee Workshop in San Francisco (see APPENDIX N: Materials for the Risk Communication Workshop). The intent of the training was to utilize the expertise of tracking grantees and their partners to better understand how the overlapping principles of risk communication and public participation can be applied to the Tracking initiative. Specifically, the goals were to:

- Understand a planned approach to incorporating basic public participation and risk communication concepts into program planning, implementation and evaluation.
- Review basic issues and guiding principles for health risk communication and public participation.
- Identify the challenges of communicating EPHT program and other information (e.g. data) and discuss how principles of risk communication and public participation can be applied in the context of Tracking.

The feedback that came to the facilitators immediately after the training was that the training was very useful to grantees. The participants agreed that some of the information from this training could be used for the creation of a Tracking 101 distance learning course on risk communication, and public participation as they pertain to EPHT.

## Training and Tools for GIS and Spatial Linkage

UC Berkeley Academic Partner for Excellence and our program conducted an advanced GIS Workshop on August 17, 2005 in Oakland, California. This workshop was created as a result of the training needs assessment that was conducted by UCBAPE and discussions among the western states partners following that needs assessment. We conducted 4 sessions described below:

- The Spatial Linkage Workshop provided background, high-level architectural elements, and detailed deployment instructions for automated enterprise spatiotemporal integration (see APPENDIX M: GIS Workshop Materials). A definition for spatial linkage was described along with the conditions for why spatial linkage architecture and services are important and necessary components of an environmental health tracking system. Conceptual model elements were provided for flow-process, network architecture, content/data ontology, and software-coded object definitions. Implementation specifics were discussed for our program-developed health-centric traffic hazard spatial linkage service. These included discussion on the creation of a segment-based traffic volume network, enterprise spatial database issues, hazard and health event definitions, coded objects and methods, and web service production and consumption.
- The Enterprise Geocoding Workshop: Architecture and Issues (see APPENDIX M: GIS Workshop Materials) examined the details of creating a real-time centralized geocoding service. This training provided a definition of enterprise geocoding and evidence for why it is an important component of an environmental health tracking system. Detailed instructions for developing a centralized service were described using Environmental Health Systems Research Institute's (ESRI) Spatial Database Engine (ArcSDE), the Java application development platform, and server products from the Apache Software Foundation (Tomcat and Axis). Specific advice was described for creating specialized geocoding indices and for dealing with product-specific nuances.
- The Spatial Filtering Workshop Using ArcGIS (see APPENDIX M: GIS Workshop Materials) provided simple, yet detailed instructions for creating a de-identified health event density estimation surface in a well known ESRI product.
- Finally, the workshop included a discussion of space/time cluster detection approaches and their relevance to EPHT (see APPENDIX M: GIS Workshop Materials). This included an orientation to the different kinds of cluster detection methods (global, focused, and local) and how they differ from model-based geostatistical approaches. This was followed by a review of density estimation mapping and a comparison of simple Monte Carlo simulations versus Kuldorff's Scan statistic as regard their utilities for cluster detection in EPHT programs.

## 5.f.2. Challenges and Barriers

### Risk Communication Training for October 2004 CDC Grantee Workshop

- The limited amount of time (3 hours) to cover a complex topic was a challenge.

## 5.f.3. Lessons Learned

### Risk Communication Training for October 2004 CDC Grantee Workshop

- Assistance from ORISE consultant and DHS EHIB Community Participation and Education Section staff provided additional expertise that was useful for planning and facilitation of the training.
- The Alameda County Pilot Project stakeholder participation activities provided experiences from which we could draw examples for the case study presentation.

## 5.f.4. Recommendations

We have identified a broad set of training and training tool needs related to EPHT. EPHT programs, the NEPHT program, National EPHT Partners, and the Academic Partners for Excellence should leverage their experiences and successes to develop a training/workshop curriculum, develop tools and resources, and conduct training in the following areas:

### **ENVIRONMENTAL PUBLIC HEALTH**

- Relationship between human health and the environment.
- Interaction between physical environment and other determinants of health.

### **ENVIRONMENTAL PUBLIC HEALTH TRACKING**

- History and background.
- Uses and limitations of environmental public health data (recognizing how data illuminate ethical, political, scientific, economic, and overall public health issues).
- Examples of environmental public health tracking in action.

## SPECIFIC MODULES

### **Data overview:**

- Statistical and epidemiological terms.
- Understanding different types of health surveillance and environmental data and determining appropriate uses and limitations of both quantitative and qualitative data.
- Identifying relevant and appropriate data and information sources.
- Evaluating the integrity and comparability of data and identifying gaps in data sources.
- Making relevant inferences from quantitative and qualitative data.

### **Data collection:**

- Collecting primary data or accessing secondary data on environmental hazards/exposures and/or environmentally related health effects.
- Conducting community health surveys: benefits and limitations.
- Choosing appropriate data collection methods.

### **Data analysis:**

- Accessing, summarizing, and interpreting information relevant to environmental health issues.
- Analyzing and disseminating data for small areas (zip code, sub-county, census tract, etc.) while protecting individual privacy.
- Partnering with stakeholders and communities to attach meaning to quantitative and qualitative data.
- Utilizing GIS mapping (visually representing geographically based information); other spatial statistics/epidemiology; and environmental epidemiology.
- Conducting multilevel (hierarchical) epidemiological analysis.

### **Data management:**

- Creating or identifying and implementing appropriate data standards.
- Linking and integrating existing data through collaborations and technologies.
- Developing, adopting, or purchasing interactive web-based data dissemination systems.
- Understanding the tools and technologies for working with data: spreadsheets, databases, geographic information systems, statistical software, and Internet applications.
- Understanding ethical principles to the collection, maintenance, use, and dissemination of data and information.

### **Data application:**

- Effectively integrating data in community environmental health assessments (defining, assessing, and understanding the health status of populations and environmental risks).

## CALIFORNIA ENVIRONMENTAL HEALTH TRACKING PROGRAM

- Using data to facilitate and inform program planning/evaluation; strategic planning; priority setting; decision making; and service delivery.
- Employing data in communication and public education campaigns (effectively presenting accurate demographic, statistical, and scientific information for professional and lay audiences).
- Using data as a community building tool and to promote and inform public participation.
- Using media, technologies, and community networks to communicate data and information.
- Employing data in informing and advocating for public health programs, policies, and resources.