MCH Epidemiology 2010 Preconference Data Skills Training Workshop
San Antonio, TX

Training Description and Curriculum

December 13-14, 2010
8am-5pm

Topic
Basic Geospatial Methods for Public Health Professionals: ArcGIS Desktop I (Version 9.2)

Background
There is a growing need among health providers to understand the spatial relationship and impact of spatial factors on human health. The current availability of powerful desktop computers and georeferenced environmental, socio-economic and other health data have led to the recognition of geographic information systems (GIS) as powerful tools for public health research and epidemiology.

This course is designed for those who have no prior education or workplace experience with GIS or ArcGIS software. Managers and GIS support staff members who infrequently use ArcGIS software and would simply like to understand how GIS fits into their organization or would like to get to know the new version of ArcGIS will also benefit.

The course will help you understand what GIS is, what it can do, and how others are using it. Participants will learn the fundamental concepts and basic functions of GIS, the properties of GIS maps, and the structure of a GIS database. Exercises are designed to help participants develop basic software skills by working with ArcGIS to visualize geographic data, create maps, query a GIS database, analyze data using common analysis tools, and solve geographic problems using a systematic approach.

Training Goal
The purpose of this training is to increase the awareness of public health professionals of the benefits of collecting and using geospatial data to analyze public health research questions and evaluate public health issues.
Training Objectives
Upon completion of the two-day training, participants should be able to:

- Understand the basic concepts and terminology of a geographic information systems
- Understand the relationship of geospatial science in public health
- Understand geographic and projected coordinate systems and the relationship to shape, area, distance and direction (SADD)
- Create, manipulate, and manage data in a geospatial database including geocoding
- Create map visualizations with geospatial data using appropriate symbols, labels and classes
- Solve geospatial problems with common analysis operations and geoprocessing

Target Audience
This workshop is aimed at public health professionals who work in public health agencies. It assumes little or no previous knowledge of GIS and should be considered no more than an introduction to what a GIS can do. As few public health professionals have sufficient time to become “GIS professionals,” this workshop has been created to introduce basic GIS concepts using both lecture and practical hands-on exercise format.

Prerequisites
The workshop assumes most participants have little or no previous experience with GIS methods or software. Registration will be limited to 25 participants.

Training Methods and Approaches
The workshop includes a mix of lecture and hands-on exercises that best illustrate common methods of visualizing and analyzing geospatial data. The instructors will use ESRI ArcGIS software for the demonstrations and exercises. Participants will be asked to submit sample MCH datasets in advance, several of which will be selected to be used as examples during the training. Participants will be provided with laptops for the duration of the training and course manuals to keep.

Course Curriculum
Day one
- Exploring geographic data
- Managing map layers
- Symbolizing categorical data
- Symbolizing quantitative data
- Labeling map features
- Understanding coordinate systems and map projections
- Making a map layout

Day two
- Managing tables
- Editing features and attributes
- Creating geodatabases and feature classes
• Obtaining locations from attributes
• Solving spatial problems with query and analysis
• Customizing ArcGIS Desktop
• Discussion on MCH- specific GIS data issues

Co-Trainers Information
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