Building Capacity to Use Geographic Information Systems (GIS) in a Chronic Disease Setting: Texas 2012

BACKGROUND
Geographical Information Systems (GIS) describe a group of software tools and methods used to manage, analyze, and display geographically referenced data. It is an increasingly used technology in chronic disease surveillance to identify geographic concentrations of high-risk groups, disparities and to inform policy/decision makers. The Health Promotion and Chronic Disease Prevention Section (HPCDP) at Texas Department of State Health Services recognized the need to train program professionals to use GIS technology. This poster describes the GIS training received by HPCDP.

OBJECTIVE
The goals of this training were to build capacity and integrate the use of GIS into the daily functions of chronic disease programs.

METHODS
The National Association of Chronic Disease Directors (NACDD) announced the GIS training opportunity for state health departments in collaboration with University of Michigan (UM) and the Centers for Disease Control and Prevention (CDC). HPCDP applied and was selected for this training. The training was from February-October 2012.

RESULTS
HPCDP selected:
- a core team consisting epidemiologists and program specialist to receive the training at University of Michigan.
- an extended team comprising of variety of expertise including GIS was created for ongoing support and consultation. This team included Program Specialist for Tobacco Prevention and Control Program, Evaluation Coordinator for Nutrition Physical Activity and Obesity Prevention Program, Diabetes Program Coordinator, Diabetes Branch Manager, Texas Asthma Central Program Epidemiologist, Texas BRFSS Coordinator, Systems Analyst and GIS Team Lead for Community Preparedness Section.

HPCDP identified four priorities to accomplish during the training:
- Highlight disparities and document the burden of chronic diseases
- Demonstrate geographic overlap in modifiable risk factors and co-morbidities
- Illustrate state funded community based programs and location of partners and interventions
- Inform policy and decision makers

First training: April, 2012
Introduction of ArcGIS: Software and basic shape files and datasets were provided by UM and ESRI. Core team was assigned to make maps documenting burden of heart disease, stroke, other chronic diseases, and poverty related data.

Extended Team Meeting: May, 2012
Overview of training, project timeline, first GIS training materials and maps made by the core team were shared with the extended team.

Second training: June, 2012
The second training was focused on making maps on the priorities stated earlier, with some intermediate skills.

Third training: August, 2012
The third training concluded the series with an overview of more advanced analyses using ArcGIS.

Technical Support from UM Training Staff
The training staff from UM provided ongoing support via virtual office hours, monthly conference calls and e-mails as needed.

A document sharing portal was created for the states participating in the training for peer-learning and sharing maps.

CONCLUSION
HPCDP developed the capacity of creating GIS maps for the first time through this training and has produced more than 40 maps since April 2012.

Many of these maps have been used in disease burden reports, factsheets, presentations and exhibits.

The maps have improved documentation of geographic disparities related to chronic diseases; helped make informed program decisions and enhanced partnerships and collaboration with internal and external agencies as envisioned in priorities.

HPCDP plans to initiate an internal GIS user group and train more staff members. Other state chronic disease programs may use similar training programs to meet the needs for geospatial displays.