Geography of Intervention: Using Mapping Techniques to Apply the Health Equity Lens

Monique C. Bethell, Ph.D.
CTG Health Equity Coordinator
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Monique.bethell@dhhs.nc.gov
“It’s true that... our basic job is to describe the world as it is. But I don’t think that that’s the only thing that matters.... Rather, we think that understanding this aspect of human nature is going to perhaps change the way we think and change the way we respond to important problems and issues in the real world.

–Joshua D. Greene, GIS and Science, Quote of the Day Aug 4, 2010
Moving From Health Disparities to Health Equity

Using our knowledge to address real world problems...

- **Health disparities** – documenting the burden of disease and adverse health conditions that exist among specific populations
  - Concerns about underlying factors that impact health differences
  - Emergence of understanding the interaction of geographic location, social context and environment as a way to “leverage improvements in population health (Ricketts, 2012)
Health Equity “Defined”

Everyone one has the opportunity to achieve their health goals, where no none is disadvantaged from doing so because of their race/ethnicity, social demographic and economic status, and geographic location.

• Why focus on health equity and geography?
  – Emphasis on understanding “root causes” of health disparities and relationship to location, access and availability of resources
  – Policy, systems and environmental in-equalities that create health inequities in neighborhoods and communities
Achieving Equity Means Recognizing Inequities Exist

- **Place Matters**
  - Poor health and premature mortality risk concentrated in certain neighborhoods and communities

- **Status matters**
  - Low income and lack of education contribute to worse health outcomes, particularly for racial and ethnic minority populations

- **Resources matter**
  - Access to health enhancing resources limited in underserved and marginalized communities
Health Equity: The Paradigm Shift

Focus Is On Where We...

LIVE

LEARN

WORK

PLAY
Why use mapping as a tool to address health disparities and monitor health equity

• Addressing health and geographic disparities are program requirements for CTG
  – Provide guidance on how to apply health equity approach
  – Focus on different mechanisms related to disparities

• Maps are a tool
  – to support planning, prioritizing and tracking health equity interventions and outcomes.
  – Model for understanding and visualizing spatial relationships
What is GIS?

Geographic Information Systems (GIS)

- It allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps and charts.
- Can be used to generate visual description of data that tell a story about what is happening in our communities.

“Maps are like campfires – everyone gathers around them, because they allow people to understand complex issues at a glance, and find agreement about how to help the land.”
What did we discover???

There is considerable variation in the utilization of health care, availability of resources and in outcomes, by region.

Racial disparities are more prevalent in some areas, but are less so (or may not be present) in other areas.

Geographic differences consistent across many risk factors and social determinants.
North Carolina
2009 Estimated Percent of Obesity for Adults* by County

Legend
Percent
- 22.1 - 26.7
- 26.8 - 30.6
- 30.7 - 34.8
- 34.9 - 41.1
~ CTG Regions

*Estimates from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau’s Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates. Therefore, 2009 estimates are based on 2008-2010 BRFSS data.
Benefits of GIS Mapping:
Keys to Unlocking the Code

CTG and GIS:
Application of Health Equity Lens
Key #1: Planning and Prioritizing

- Illustrate geographic distribution of health status, outcomes and disparities across populations
- Provide visual of social disadvantage and spatial representation of neighborhood conditions and factors that contribute to health inequities
- Determine entry points for intervention
Key #2: Partnership building and multi-sector collaboration

• Use as a tool to foster collaborative relationships across multiple sectors and build strategic partnerships/alliances
• Build capacity of community organizations to engage in policy advocacy process
• Encourage discussion and increase community and civic engagement
Key #3: Communication

• “Tells the story” in a clear and easily understandable format
• Describe salient social problem that can be addressed by policy, systems or environmental change
• Visualize nature of social problem and interrelationship of factors that contribute to poor health outcomes
Key #4: Monitoring and tracking

- Short term outcomes
- Achievements and success
- Untapped areas of potential
- Mid-term action planning or course correction
Key #5: Evaluating Impact

- Enhanced picture of long term impacts of interventions on health disparities
- Shows trends and sustainability of community change efforts
Challenges with Mapping: Lessons learned from CTG

- Good to start the story – but doesn’t tell the entire story
  - Use multiple sources of data
- Know your data and mapping limits
  - be cautious with interpretation
- Map mania
  - Too many maps
  - Too much data on single map
- Missing data: Oops!! Where did all the lakes go?
  - Check maps and verify accuracy