Mapping Attitudes towards Health Equity and Justice Using the Max-P Algorithm  

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ABSTRACT TEXT: In support of the Robert Wood Johnson Foundation Culture of Health Initiative, the American Health Values Survey (AHVS) was a national study of more than 10,000 U.S. adults designed to create a typology based on health values and beliefs. A K-means analysis yielded six unique typology groups, some of which believe in health equity, race-ethnic disparities, and social determinants of health, and others who do not. Maps were recently created using the AHVS data to explore the typology groups geographically as well as to understand the conceptual constructs that underlie their specific beliefs. Some of these include the belief in the health effects of education, housing quality, access to healthy food, and the community person lives in. The resulting maps and spatial analysis present important geographic differences across the U.S. that have implications across several influential sectors including policy, advocacy and communications. Current efforts are underway to create a communication guide for use among recipients of grants to conduct policy initiatives aimed at creating healthy communities and health care systems. The maps developed as part of the project will be also be made available to support local and regional initiatives. Mapping the AHVS data created unique challenges that were met using open source software.

Our presentation will share a series of maps focused on addressing health equity, social determinants of health and disparities, yet will also present how we avoided the pitfalls of mapping survey data using modeling and visualization with R and GeoDa software packages. Specifically, our presentation will explain how we created information-rich maps while ensuring that (1) areal units have similar numbers of respondents with given beliefs and (2) the maps are easily interpretable. Using the Max-P districting building algorithm in GeoDa, we grouped census tracts by respondent similarity until they met the lower bound for number of respondents per district. This presentation will aim to explain the Max-P algorithm, how to implement it, and why it was chosen over similar regionalization tools.

More information about the AHVS can be found here:  

Geographical Variations of HPV Screening Among Haitian Women in South Florida  

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ABSTRACT TEXT: Background/Purpose: Worldwide, sexual and reproductive cancers, such as that of the cervix, remains the number one killer of women. Death from cervical cancer is absolutely preventable with early detection of cancerous lesions. Although mortality from cervical cancer in the US has significantly decreased over recent decades, immigrant women experience disproportionate rates of disease. Notably, Haitian women, in particular, have been found to have increased risk for cervical cancer as evidenced by stark differences in delayed illness detection and subsequent treatment. Thus, this paper seeks to assess variations of HPV screening for Haitian women living in South Florida by individual and neighborhood characteristics.

Methods: Extracted and merged from two larger studies, this sample includes N=348 Haitian women living in South Florida who were at-risk for cervical cancer, defined as self-reported age of 30-65 and unscreened in previous three years. SaTScan software was used to spatially analyze clustering of individual level factors (i.e. screened and unscreened women). Matched census data (i.e. age and foreign-born status) were used to investigate neighborhood level factors.

Results/Outcomes: On average, participants were 45 years of age (SD=9.12), born in Haiti (98.5%), less than high-school educated (54.3%), and unemployed (79.5%). Additionally, 31.3% of women reported never having a Pap-smear. Differences in screening were observed across both individual and neighborhood level factors. Hotspot results detected clustering of women who were screened but did not detect clustering of women who were unscreened. Census data results identified screening variations by neighborhood of residence.

Conclusion: Numerous factors may influence the disproportionate burden of HPV-infection and related cancer in Haitian women, including lack of screening. Results highlight the importance of routine access to healthcare services in prevention and control of cervical cancer. Immigrants may be at higher risk for disease due to barriers in accessing U.S. health-systems. A sub-set of the sample were at-risk without regard to neighborhood level factors, suggesting high risk group.
Death By Drugs: A Spatio-temporal Analysis of Drug Epidemic in the U.S.
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ABSTRACT TEXT: The United States is experiencing an epidemic of drug overdose deaths. Drug overdose deaths in 2017 totaled 72,000, which was a 12.5% increase from 2016. The epidemic of drug overdose deaths is a growing public health crisis in the United States. Since 2000, the rate of drug overdose deaths has increased by 137% nationwide, more than 600% since 1980. This exponential growth in overdose numbers makes the drug epidemic more deadly than gun violence, car crashes, or AIDS. In this research, I analyzed the cause of death as a result of drug overdose from 2010 to 2017 on a county level scale. I created a series of maps showing the drug overdose deaths in the country, which allow to decipher the complex and evolving dynamics of the drug overdose deaths in different demographic segments in the U.S. The results show distinct hotspots of drug overdose deaths in states like Ohio, Massachusetts, Indiana, Oklahoma as well as in New Mexico, Nevada, and California. The drug overdose deaths are a leading contributor to premature deaths and are largely preventable. The results may aid the development of more effective drug abuse prevention and control strategies.