



DETECTING DISEASE CLUSTERS AND DISEASE SURVEILLANCE

Monica C. Jackson
Department of Biostatistics
Emory University
mcjack2@sph.emory.edu

One purpose of spatial analysis in public health is to detect local clusters or anomalies in patterns of disease. Historically, the spatial analysis literature tends to fall into one of two groups regarding spatial clustering. The statistical literature often assumes independent regional counts and seeks to identify local areas inconsistent with global patterns of disease risk. In contrast, the geography and spatial econometric literature often builds inference based on global and local indices of spatial autocorrelation. Tango (1995) developed a statistic to detect spatial clustering. Rogerson (1999) noticed that Tango's statistic could be broken into two components, the first measuring goodness-of-fit and the second measuring spatial autocorrelation. We explore the use of Rogerson's (1999) expression of Tango's (1995) index of spatial clustering as a hybrid between these two types of approaches, and provide examples of patterns driving the goodness-of-fit and spatial autocorrelation components of the statistic. As well as give an overall view of how important disease surveillance has become since 9/11.