



BIOSTATISTICS SEMINAR

Identifying Health Care Communities

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ABSTRACT

Quality in health care is not uniformly distributed across individuals in the United States. Similarly, costs can widely vary. However, it is difficult to study these inequities because due to privacy restrictions, it is challenging for researchers to study the health care that individuals receive. Ecological inference is the most popular path forward; here the unit of analysis is not individuals, but rather geographic regions. This necessitates the creation of geographic regions for which we can aggregate demographic variables and health related outcomes. This talk will present preliminary research to identify "health care communities", that are (1) geographically and demographically contiguous and (2) have relatively few patients obtaining care in separate communities.

This analysis is enabled by a massive "referral" network among Medicare providers. To find health care communities, this talk will employ the eigenvectors of a similarity matrix, where the (i, j) th element measures the "referrals" from provider i to provider j . Here, the standard spectral clustering algorithm fails. This talk will primarily discuss two fixes to the algorithm (regularization and contextualization) that dramatically enhance the algorithms ability to identify health care communities.

4:15 p.m. Tuesday, November 17, 2015
LEPH 115, 60 College Street