SUPPLEMENTARY DATA

Codes for diabetes: 250.00-03, 250.10-13, 250.20-23, 250.30-33, 250.40-43, 250.50-53, 250.60-63, 250.70-73, 250.80-83, 250.90-93

Codes for LEA: 27590, 27591, 27592, 27594, 27596, 27598, 27880, 27881, 27882, 27884, 27886, 27888, 27889, 28800, 28805, 28810, 28820, 28825), ICD-9 procedure codes (84.10-17, 84.3), or ICD-9 diagnosis codes (895.0, 895.1, 896.0-3, 897.0-7, V497.0-6).

Codes for macrovascular complications: 250.70-73, 410.00-.02, 410.10-12, 410.20-22, 410.30-.32, 410.40-42, 410.50-52, 410.70-72, 410.80-82, 410.90-92, 413.9, 428.0., 428.1, 428.9, 430, 431, 432.1, 432.9, 434.00, 434.01, 434.10, 434.11, 434.90, 434.91, 435.1-435.3, 435.8, 435.9, 436, 437.1-9, 438.10-12, 438.19-22, 438.30-32, 434.40-42, 438.50-53, 438.6, 438.7, 438.81-85, 438.89, 438.9.

Codes for microvascular complications: 250.40-43, 250.50-53, 250.60-63

Testing for spatial autocorrelation

Ordinary regression analysis makes the assumption that the observations being analyzed (here, HRRs) are independent. This assumption is explicitly violated when spatial autocorrelation exists. In that case, specialized regression procedures must be used to avoid making invalid conclusions (i.e., biased regression coefficients and standard error estimates). As is conventional, two types of tests of spatial autocorrelation were conducted. First, a global test of spatial autocorrelation for each of the variables of interest was conducted using the Moran's I statistic. This test at once examines the entire dataset for whether spatial autocorrelation exists in HRRs across the entire US; for example, whether HRRs systematically have a rate of LEA that is more similar to the LEA rate in neighboring HRRs than in HRRs that are further away. "Neighbor" was defined for an given HRR as any other HRR that at least in part shared one of it boarders (i.e., a spatial weights matrix was generated using Queen contiguity). The null hypothesis in these tests was that the incidence of LEA or prevalence of other factors was randomly distributed by HRRs across the United States. A significant Moran's I test indicates non-random geographic distribution and therefore spatial autocorrelation must exist. Specifically, positive spatial autocorrelation suggests that HRRs with a high incidence of LEA are bordered by other HRRs with a high incidence of LEA (high-high), and that HRRs with a low incidence of LEA are bordered by other HRRs with a low incidence of LEA (low-low), more than would be expected by chance alone. Second, local tests of spatial autocorrelation using the local index of spatial autocorrelation (LISA) statistic (also using a Queen weight matrix) were estimated. This "local" test allows for the discovery of clustered pockets of HRRs across the landscape of the US in which the LEA or any other factor is uniformly similar but yet disproportionately high or low relative to HRRs in the rest of the country (1,2).

Reference List

1. Anselin L: Local indicators of spatial association — LISA. *Geographical Analysis* 27:93-115, 1995
2. Anselin L: *Exploring spatial data with GeoDa: a workbook*. Urbana, IL, Center for Spatially Integrated Social Science, 2005