

# **Geospatial Correlates of Doctor Shopping in Massachusetts**

**THCI Conference on Prescription Monitoring  
Research Update**

**April 2, 2009**

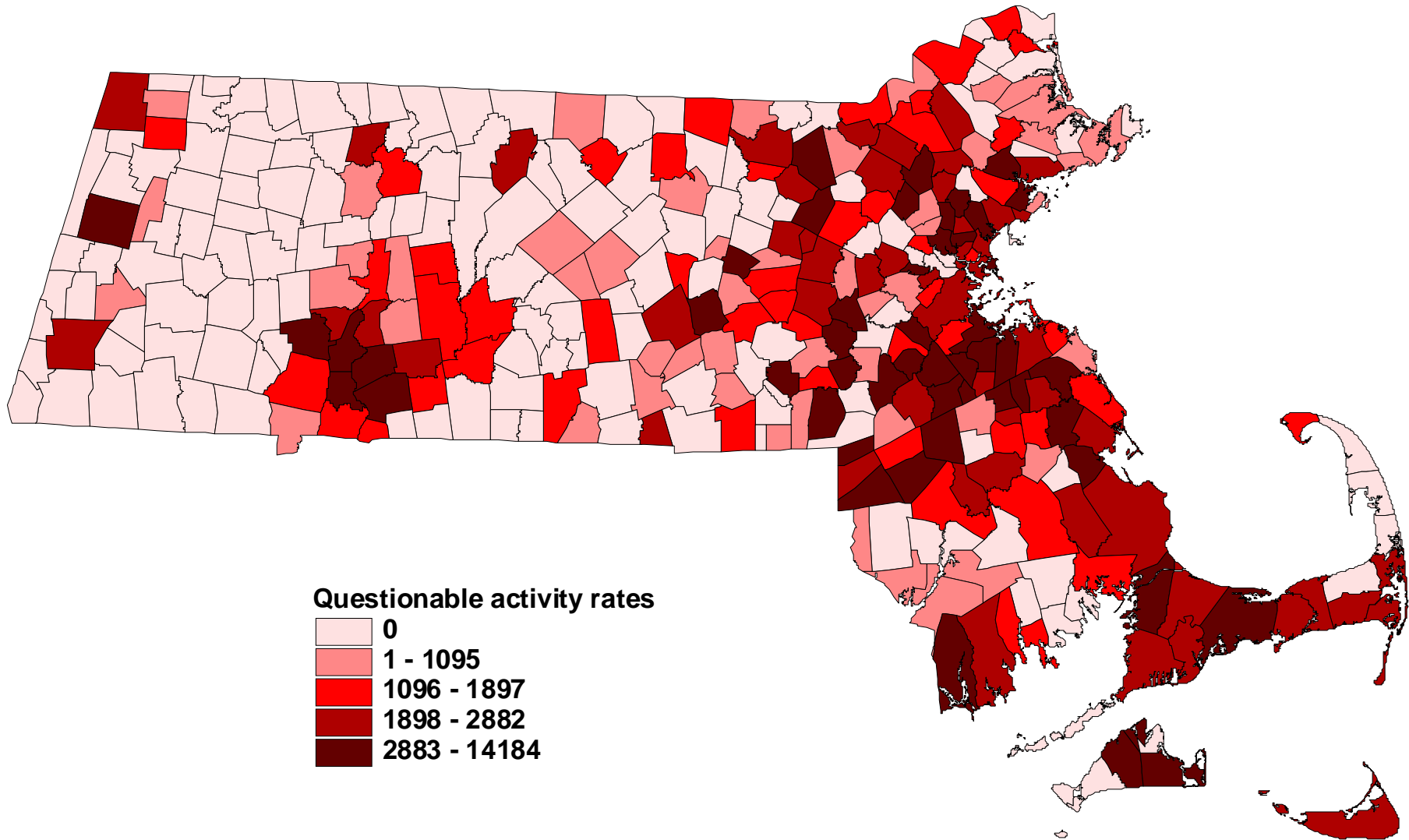
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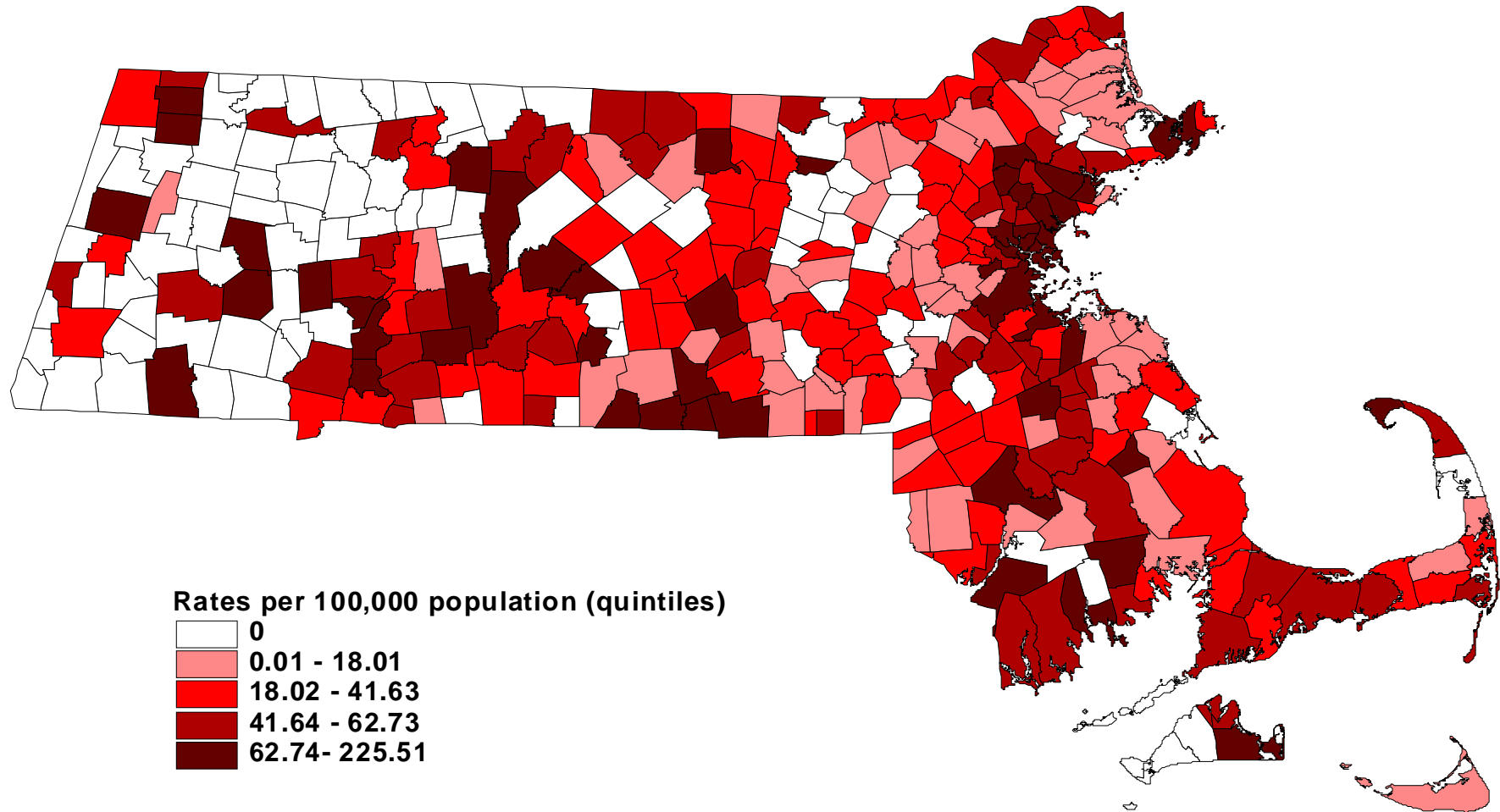
# Research Questions

- Are rates of Schedule II prescriptions and questionable activity (doctor shopping) associated with socio-demographic characteristics of towns/Zip Codes?
- Are rates of opioid overdose cases (fatal and non-fatal) associated with rates of questionable activity in towns/Zip Codes, controlling for socio-demographic variables?

# 2005 Prescriptions Associated with Questionable Activity (Rates per 100,000 Prescriptions) by Pharmacy Town



# 2005 Massachusetts Opioid Poisoning Cases Rates per 100,000, by Town



# Analytic Approach

- Analyses used:
  - 2005 Schedule II prescription data from MA PMP
  - 2000 Census data for population density, poverty rate, population mobility, proportion age 65 and over, and ethnic diversity
  - 2001 data for an index of nonprofit size diversity

# Analytic Approach

- Spatial regressions controlled for spatial autocorrelation of dependent variable (tendency for adjacent areas to be similar)
- Questionable activity was defined as at least 4 Schedule II prescriptions filled in at least 4 pharmacies during 12-month period; rates of prescriptions and questionable activity per 100,000 prescriptions
- Opioid overdose cases drawn from death, hospitalization, ED, and poison control data; rates per 100,000 population

# Selected Findings

- Rates of prescriptions prescriber Zip Code were significantly associated with:
  - Population mobility (negative association,  $p < .001$ )
  - Percent of the population 65 and over ( $p < .05$ )
  - Index of nonprofit size diversity ( $p < .001$ )
  - Rates of prescriptions per prescriber of adjacent Zip Codes ( $p < .05$ )
- Rates of prescriptions pharmacy Zip Code were significantly associated with:
  - Population mobility (negative association,  $p < .001$ )
  - Population density ( $p < .01$ )
  - Index of nonprofit size diversity ( $p < .001$ )
  - Rates of prescriptions per prescriber of adjacent Zip Codes ( $p < .05$ )