# Community Uninsurance and Unmet Health Care Needs
# Is There a Spillover Effect for Rural Areas?

Michael Castro (castrom@bgsu.edu)
Department of Sociology
Bowling Green State University

Center for **Family** and **Demographic** Research

**BGSU**
Bowling Green State University

## Background

• The majority (85%) of the uninsured in the U.S. were adults aged 18 to 64 (DeNavas-Walt, Proctor and Smith 2013).

• The percent of adults that have experienced an unmet need for healthcare is increasing from 11.4% in 2004 to 14.6% in 2010 (CDC 2011).

## The Spillover Effect

• Communities with high uninsurance rates have faced greater strain on healthcare resources (IOM 2003, 2009).
  - Lower levels of medical specialists.
  - Less operating hours.

• The insured have also been adversely affected by high levels of community uninsurance through a reduced level of access to healthcare resources.

## Prior Research

• The Spillover Effect is significantly affecting the insured but not the uninsured (Pagán et al 2006).

• However, prior studies have examined the community effect using urban areas or specific states.

• Rural residents less likely than urban residents to visit a doctor (Ormond, Zuckerman, & Lhila 2000) and are less likely to get screened for future health problems (Casey, Call, & Klingner 2001).

## Andersen Behavioral Model of Health Service Use

• Characteristics of the individual play an important role in the outcome of access to healthcare (Andersen 1968; 2005; Andersen et al 2004; Andersen 2008).
  - Predisposing, enabling, and need based characteristics.

• Community-level characteristics also play a role on individual characteristics as well as the outcome.

## Current Study

H1: Insured individuals are more likely to have an unmet medical need in the past 12 months in areas with high rates of community uninsurance.

H2: Individuals in rural areas will experience higher levels of unmet need than individuals in urban areas.

H3: The Spillover Effect for insured individuals will be stronger in rural areas than in urban areas.

## Data

• Behavioral Risk Factor Surveillance System
  - 2010 & 2011 Annual Survey Data
  - Respondents Aged 18 to 64
  - Predisposing, enabling, and need characteristics

• Small Area Health Insurance Estimates
  - 2010 & 2011 Annual Estimates of Uninsurance Rates

• Linked Together by FIPS codes.

• Final Sample of 535,140 respondents.

## Measures

• Unmet Need
  - "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?"
• Predisposing Measures
  - Age, Sex, Race/Ethnicity
• Enabling Measures
  - Insurance Status, Usual Source of Care, Education, Income, Marital Status, Veteran Status
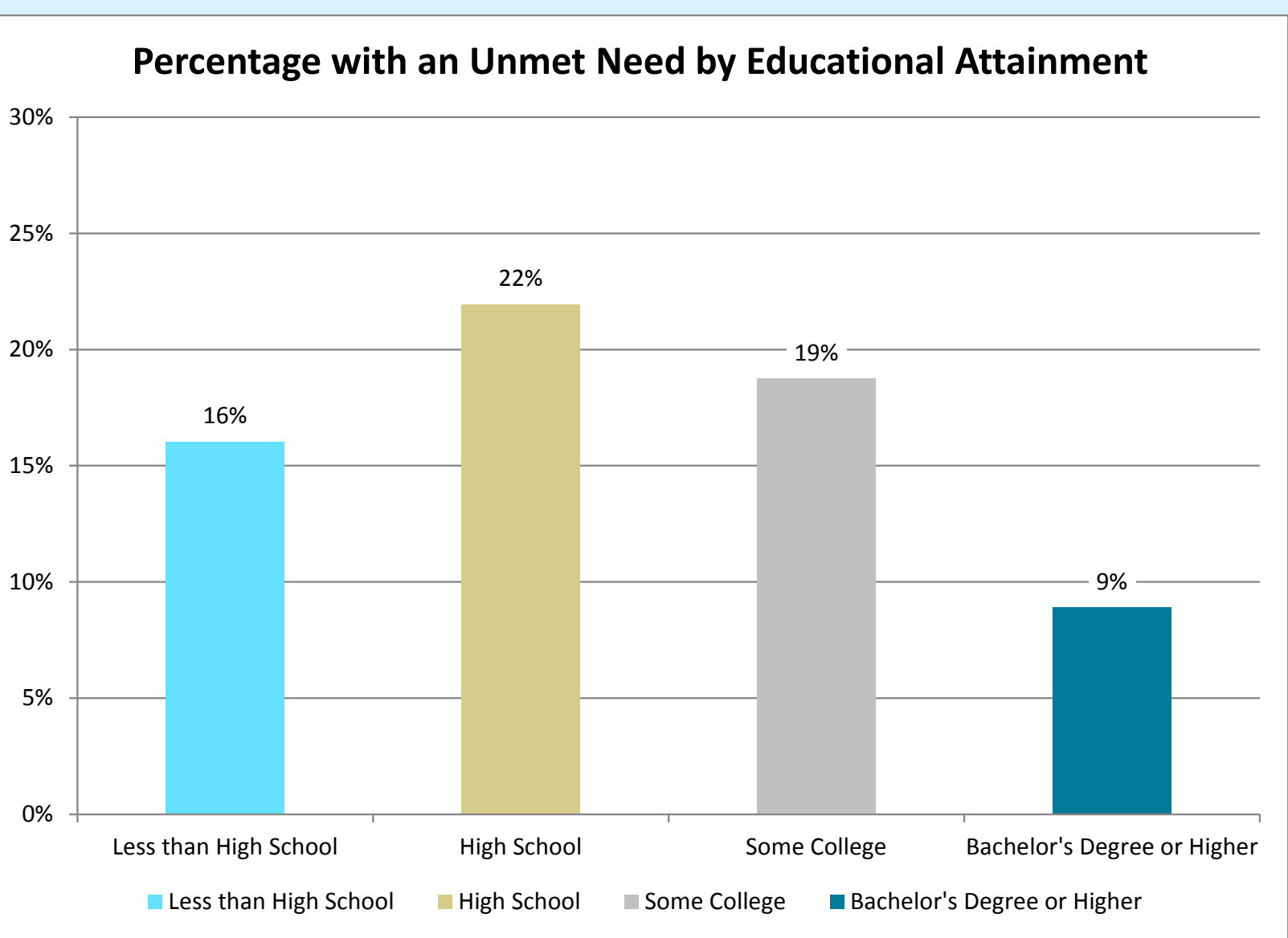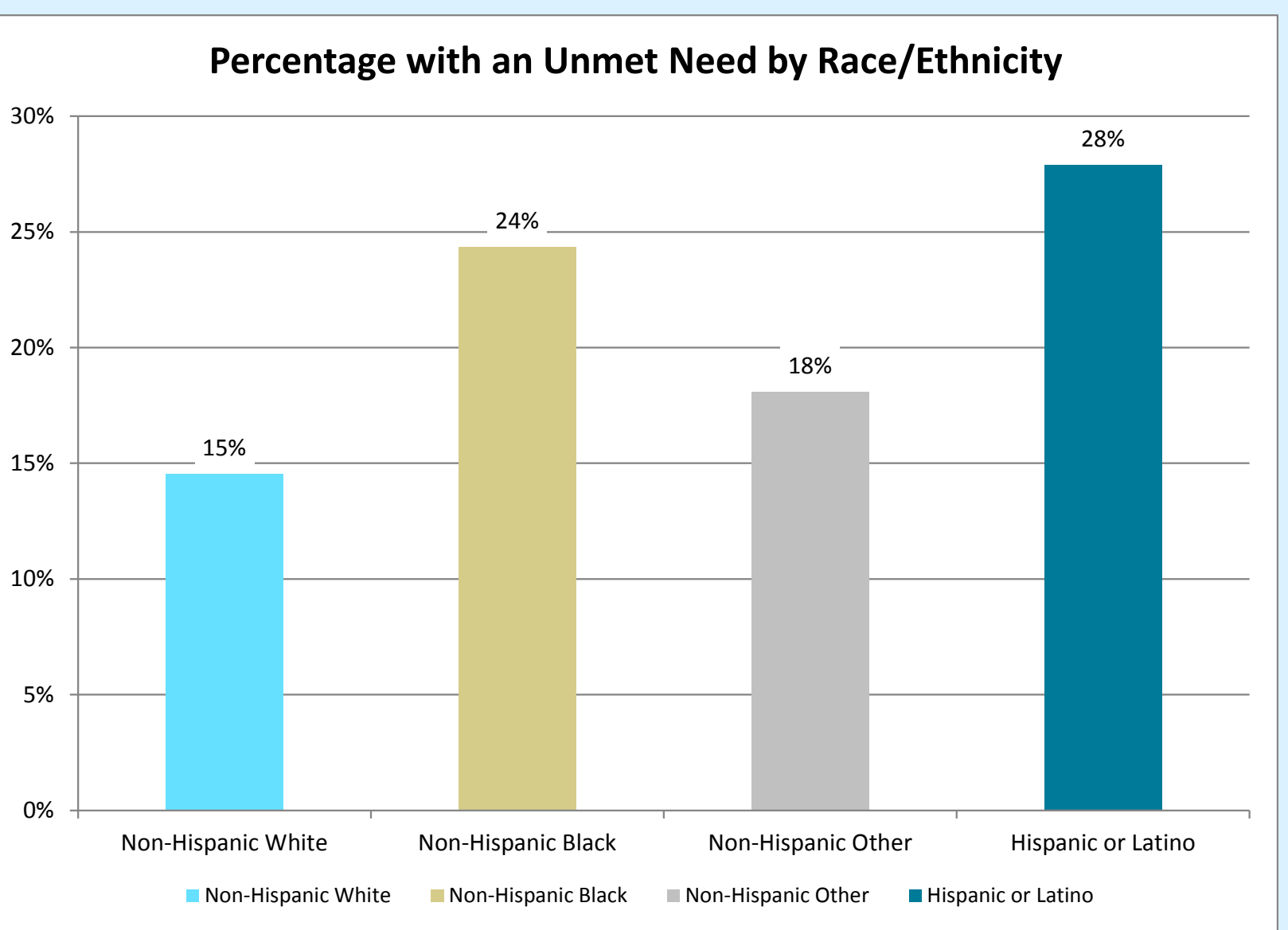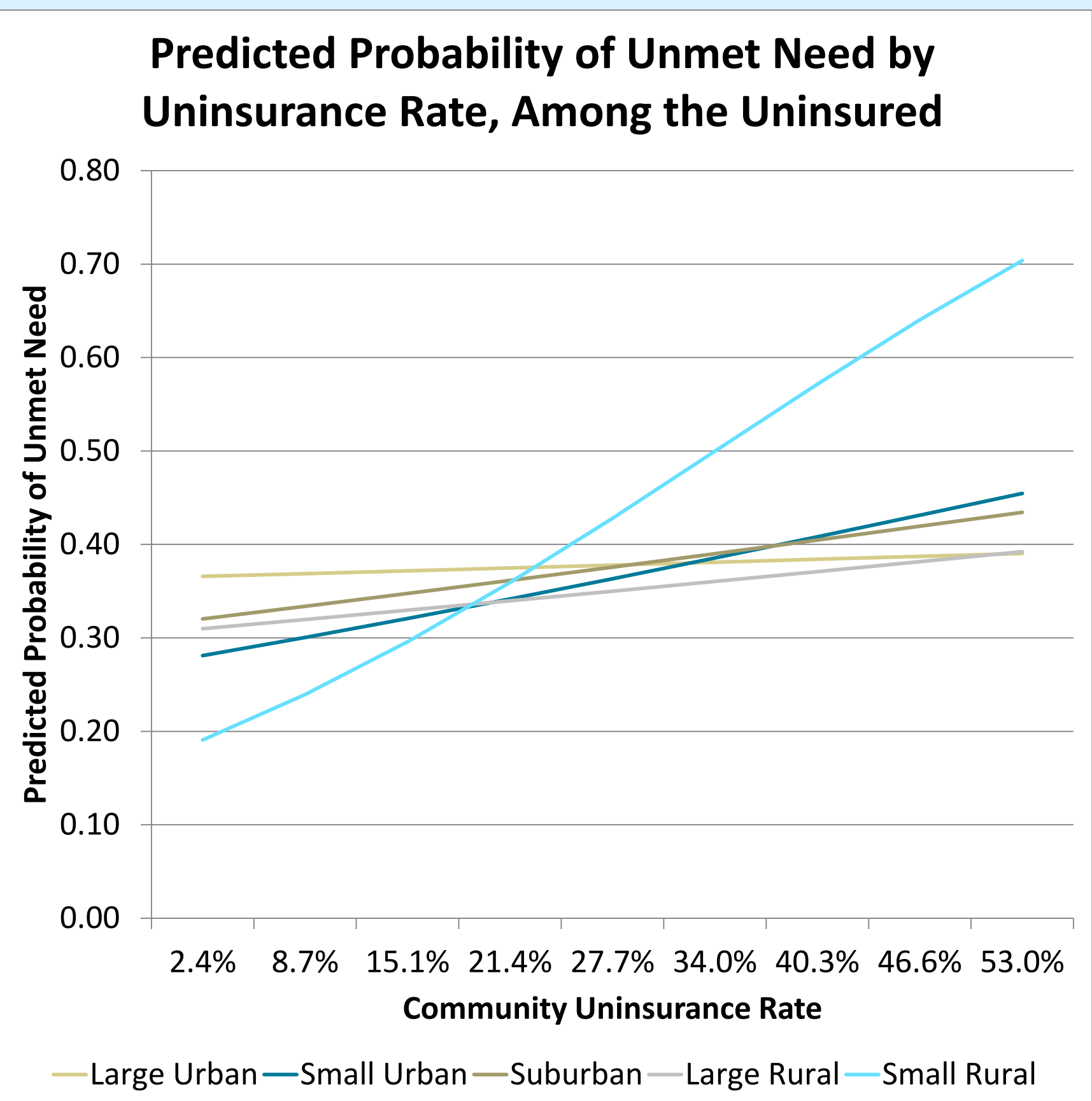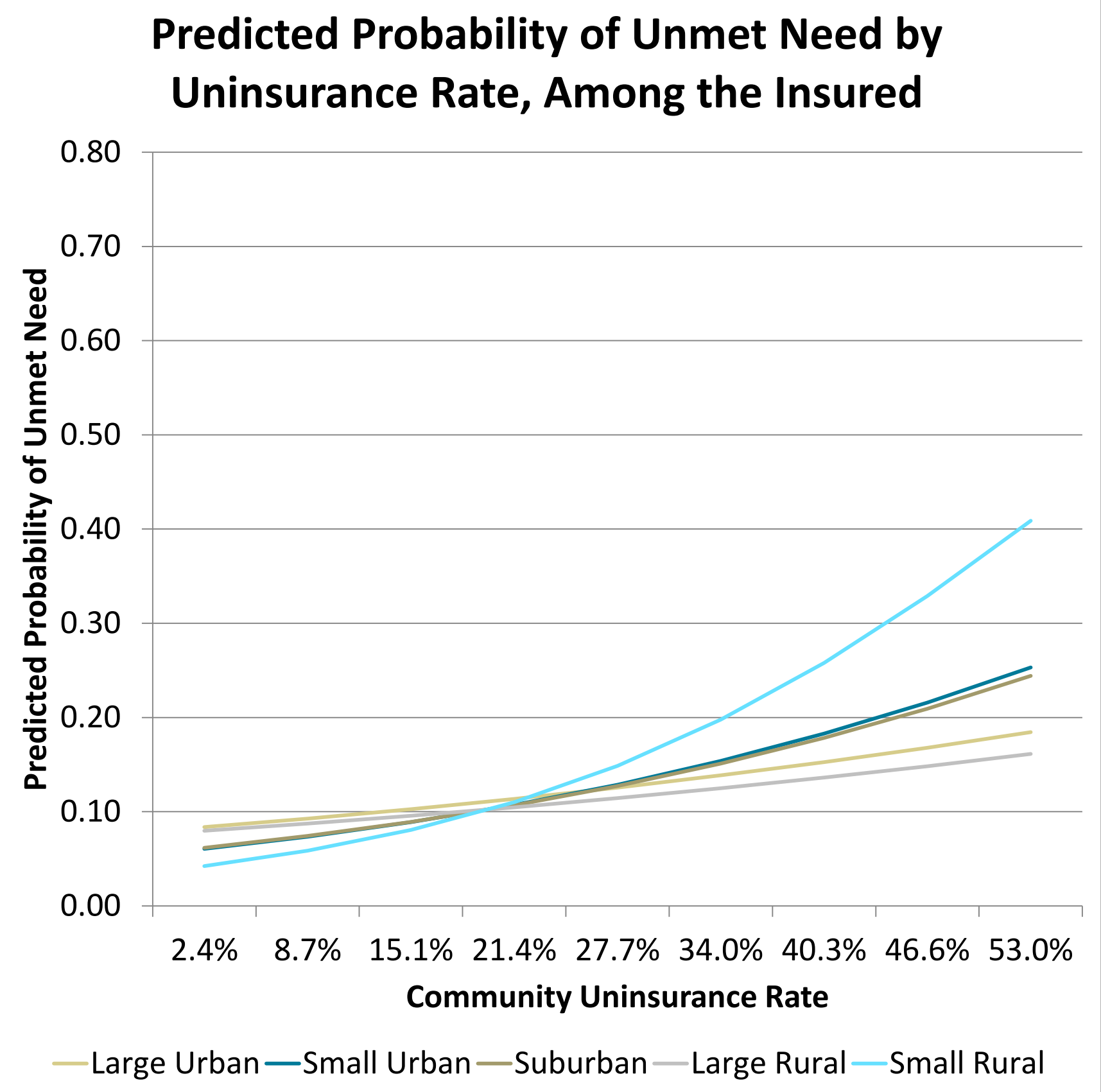• Need Measures
  - Health Status
• Uninsurance Rate

## Results


Percentage with an Unmet Need by Race/Ethnicity


Percentage with an Unmet Need by Educational Attainment

Table 5: Odds of an Individual Experiencing an Unmet Need Split by Insurance Status

| | Insured | | | Uninsured | | |
|---|---|---|---|---|---|---|
| | OR | Sig. | CI | OR | Sig. | CI |
| Aged 18 to 29 | 1.10 | ** | (1.03, 1.17) | 1.12 | ** | (1.04, 1.22) |
| Aged 30 to 49 | 1.27 | *** | (1.21, 1.33) | 1.25 | *** | (1.16, 1.34) |
| Aged 50 to 64 | -- | | | -- | | |
| Female | 1.42 | *** | (1.36, 1.49) | 1.87 | *** | (1.76, 1.98) |
| Non-Hispanic White | -- | | | -- | | |
| Non-Hispanic Black | 1.01 | | (0.94, 1.08) | 0.93 | | (0.84, 1.04) |
| Non-Hispanic Other | 1.23 | *** | (1.13, 1.34) | 0.87 | * | (0.78, 0.99) |
| Hispanic or Latino | 1.02 | | (0.93, 1.11) | 0.73 | *** | (0.67, 0.80) |
| Usual Source | 0.72 | *** | (0.68, 0.76) | 0.82 | *** | (0.76, 0.88) |
| Less than High School | 1.15 | ** | (1.05, 1.25) | 0.87 | * | (0.77, 0.98) |
| High School | 1.07 | | (0.99, 1.15) | 0.92 | † | (0.84, 1.01) |
| Some College | 1.20 | *** | (1.13, 1.28) | 1.14 | ** | (1.05, 1.23) |
| Bachelor's Degree or Higher | -- | | | -- | | |
| Employed | -- | | | -- | | |
| Unemployed | 1.52 | *** | (1.41, 1.65) | 1.40 | *** | (1.30, 1.50) |
| Not in Labor Force | 0.99 | | (0.95, 1.04) | 0.95 | | (0.89, 1.03) |
| Less than $10,000 | -- | | | -- | | |
| $10,000 to $14,999 | 1.24 | *** | (1.11, 1.39) | 1.03 | | (0.92, 1.14) |
| $15,000 to $19,999 | 1.19 | *** | (1.07, 1.31) | 0.92 | | (0.82, 1.03) |
| $20,000 to $34,999 | 1.00 | | (0.92, 1.09) | 0.76 | *** | (0.69, 0.83) |
| $35,000 to $74,999 | 0.52 | *** | (0.47, 0.57) | 0.57 | *** | (0.51, 0.63) |
| $75,000 or More | 0.21 | *** | (0.19, 0.23) | 0.34 | *** | (0.28, 0.41) |
| Married | 0.99 | | (0.94, 1.04) | 0.98 | | (0.93, 1.03) |
| Veteran | 0.81 | *** | (0.76, 0.88) | 0.91 | | (0.81, 1.02) |
| Fair or poor health | 2.10 | *** | (2.02, 2.18) | 2.34 | *** | (2.19, 2.49) |
| | | | | | | |
| Uninsurance Rate | 1.12 | *** | (1.09, 1.15) | 1.01 | | (0.98, 1.05) |
| Large Urban | -- | | | -- | | |
| Large Rural | 0.94 | | (0.86, 1.02) | 0.87 | * | (0.75, 1.00) |
| Suburban | 0.93 | * | (0.87, 0.99) | 0.94 | | (0.85, 1.04) |
| Large Rural | 0.91 | * | (0.84, 0.99) | 0.86 | ** | (0.77, 0.95) |
| Small Rural | 0.97 | | (0.80, 1.17) | 0.94 | | (0.75, 1.17) |
| | | | | | | |
| Interactions | | | | | | |
| | | | | | | |
| Uninsurance Rate x Large Urban | -- | | | -- | | |
| Uninsurance Rate x Small Urban | 1.10 | † | (0.99, 1.22) | 1.09 | | (0.95, 1.24) |
| Uninsurance Rate x Suburban | 1.09 | ** | (1.02, 1.16) | 1.05 | | (0.96, 1.15) |
| Uninsurance Rate x Large Rural | 0.99 | | (0.90, 1.08) | 1.03 | | (0.93, 1.15) |
| Uninsurance Rate x Small Rural | 1.26 | * | (1.04, 1.53) | 1.32 | † | (0.97, 1.80) |
| n | 454,530 | | | 80,610 | | |
| -2 Log L | 117,228 | | | 58,575 | | |
| R² | 0.081 | | R² | 0.113 | | |

p < .1 †, p < .05 *, p < .01 **, p < .001 ***


Predicted Probability of Unmet Need by Uninsurance Rate, Among the Insured


Predicted Probability of Unmet Need by Uninsurance Rate, Among the Uninsured

## Conclusions

• The Spillover effect is present in urban areas.

• Unmet need is lower in rural areas than in urban areas.

• Race differences of unmet need disappear after controls are included.

• The Spillover Effect is present in urban, suburban, and large urban areas. But in small rural areas the likelihood of unmet need increases for the insured and uninsured significantly.


Predicted Probability of Unmet Need by Uninsurance Rate in Small Rural Areas


Predicted Probability of Unmet Need by Uninsurance Rate in Large Urban Areas
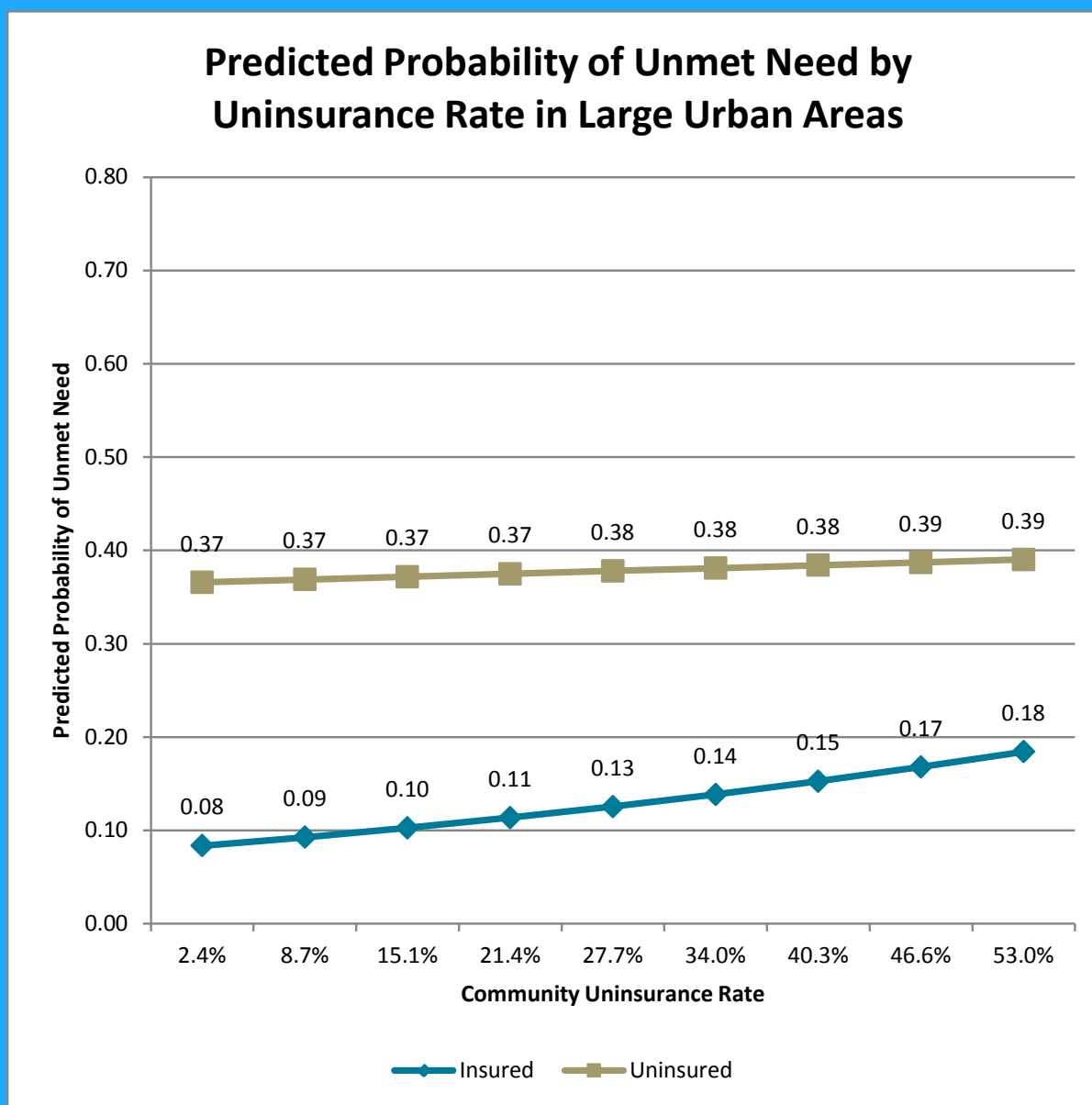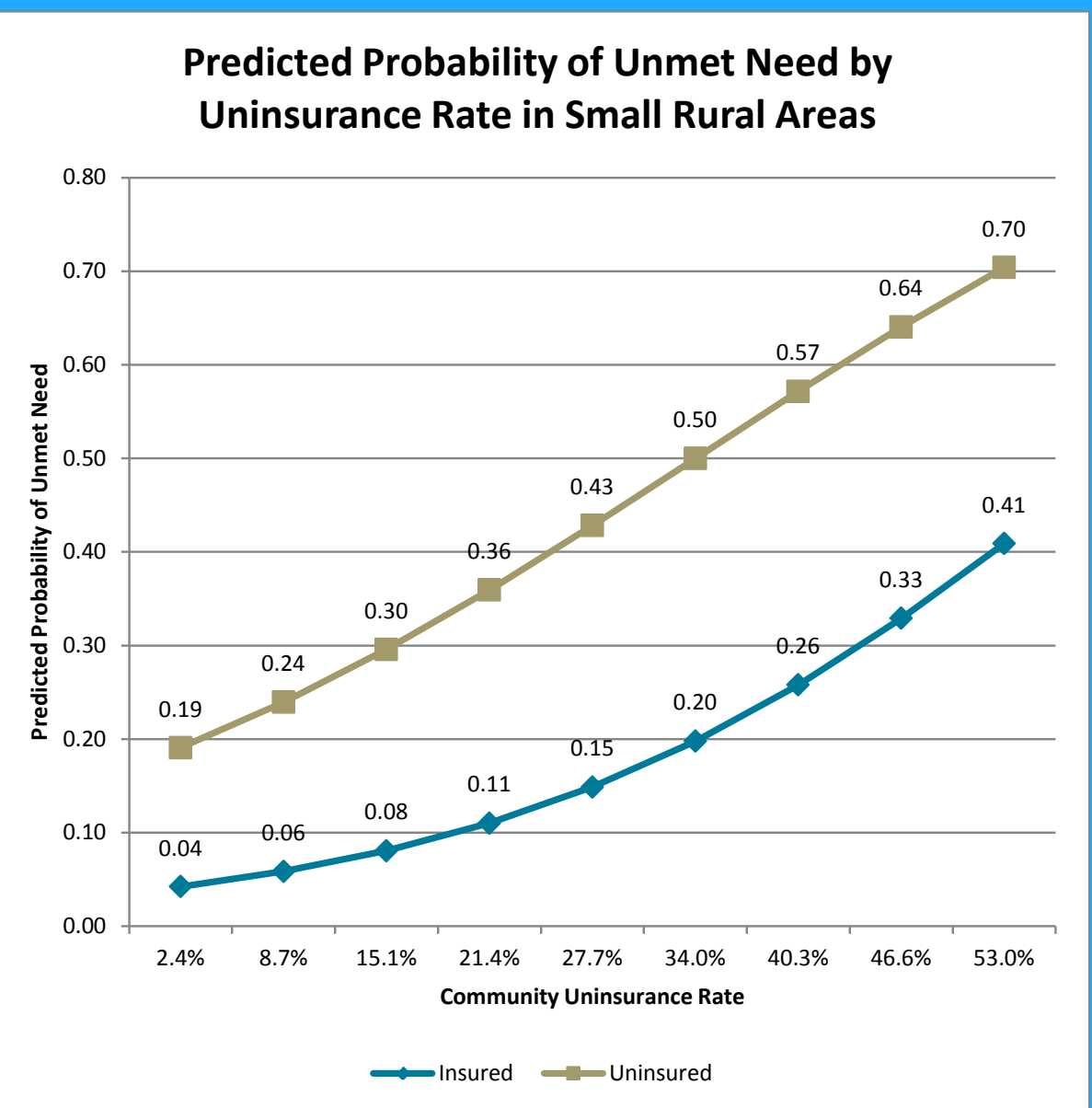
## Limitations

• Not able to distinguish type of Insurance.

• Don't know full-time/part-time status of respondent.

• What is Urban/Rural?

• Some smaller counties are aggregated groups of counties.