Geographic Disparity in Health Insurance Coverage:
Inner Cities versus Outer Metropolitan Areas

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Research Objectives

1.) Measure the disparity in health insurance coverage between "inner cities" and "outer metropolitan areas" (OMA's)

2.) Determine the factors that drive the disparity.

Prior Analysis of Coverage by Geographic Areas

- Often based on Metropolitan Statistical Areas (MSA's)

- Uninsured rates in 2000 (CPS, 2001)

  14.2% for urban areas – i.e. MSA

  13.1% for rural areas – i.e., non-MSA

- MSA's are inadequate to distinguish between inner cities and suburbs

Inner cities vs. Outer Metropolitan Areas (OMA's)

- Heterogeneity within MSA's

    Population density

    Population size

    Demographics

    Economic activity

    Health service markets

- Some states are "all MSA" – e.g. NJ, RI

Research issues

- Anecdotally, uninsured rates are higher in inner cities
- Systematic research is rare

- Policy response depends on understanding role of <u>individual vs. area factors</u> that determine coverage
- Individuals in inner cities more likely to have characteristics associated with lacking coverage – e.g., poor, minority, non-citizen)
- Area factors may also contribute – e.g., availability of free care from inner city providers, community networks

Population & data

- Children (0-18) and non-elderly adults (19-64) living in NJ in 2001

- New Jersey Family Health Survey (NJFHS)

  statewide phone survey

  2,265 HH's ==> 6,466 individuals

  Over-sample of low-income families

  59.4% response rate

Identifying inner cities in NJ

- U.S. Census Bureau ==> All of NJ is "urban"
- But great diversity exists in population density, size, demographics, & coverage

- Work with "census places" (e.g. city/town)
- **Inner cities** defined as census places with
  Population >= 25,000
  Population per sq mile (PPSM)>= 9,000

- All other parts of NJ considered **Outer Metropolitan areas (OMA's)**
- Similar results w/other thresholds

Measuring factors that affect coverage

- Factors affecting coverage are well known

  E.g., Low income, minority & immigrant populations

- These factors are more common in inner cities

- Expect a **Geographic Coverage Disparity (GCD)** that reflects disadvantage in inner cities

- **GCD = percentage point difference in uninsured rates between inner cities and OMA's**

- The incremental contribution of each factor is not known

- Incremental contributions are measured using **regression decomposition**

Overview of regression decomposition model

1. Differences in individual characteristics – inner city vs. outer metropolitan areas

2. Model likelihood of lacking coverage as a function of these characteristics

3. Estimate separate models for inner cities & OMA's

4. Partition geographic coverage disparity by "mean effects", "slope effects", & "unexplained difference" (defined below)

Details of regression decomposition model

Basic model: $Y_i = \alpha + \beta X_i + \varepsilon_i$

Y ==> probability of lacking coverage

X ==> characteristics of individuals

Model evaluated at mean values for inner cities & OMA's

$$\overline{Y}^{IC} = \alpha^{IC} + \beta^{IC} \overline{X}^{IC}$$

$$\overline{Y}^{OMA} = \alpha^{OMA} + \beta^{OMA} \overline{X}^{OMA}$$

Decomposed difference in uninsured rates, part 1

Decomposed difference (DD):

$$\left(\overline{Y}^{IC} - \overline{Y}^{OMA}\right) = \left(\alpha^{IC} - \alpha^{OMA}\right) + \left(\beta^{IC} - \beta^{OMA}\right) \cdot \left(\frac{\overline{X}^{IC} + \overline{X}^{OMA}}{2}\right)$$

$$+ \left(\overline{X}^{IC} - \overline{X}^{OMA}\right) \cdot \left(\frac{\beta^{IC} + \beta^{OMA}}{2}\right)$$

Decomposed difference in uninsured rates, part 2

Decomposed difference (DD) has 3 components:

1.) Unexplained difference – factors not measured in the model

2.) Slope effects – how the effect of each factor (e.g., low income) may vary by IC or OMA location

3.) Mean effects – difference in prevalence of each factor (e.g., low income) by IC or OMA location
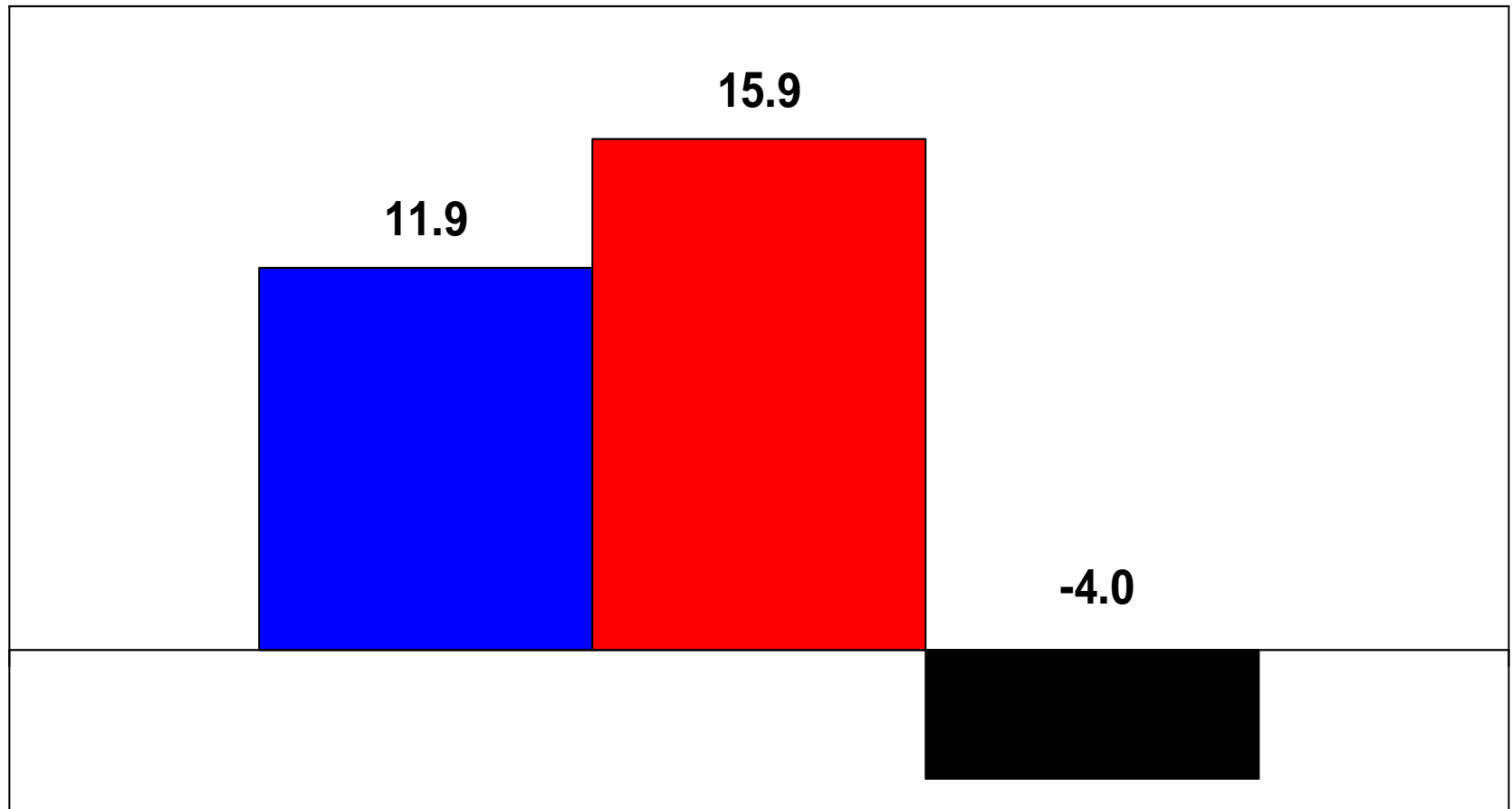
The Geographic Coverage Disparity for Children

Uninsured Rates for Children in NJ, 2001

19.7%

7.8%

11.9%

Inner cities

Outer metropolitan areas
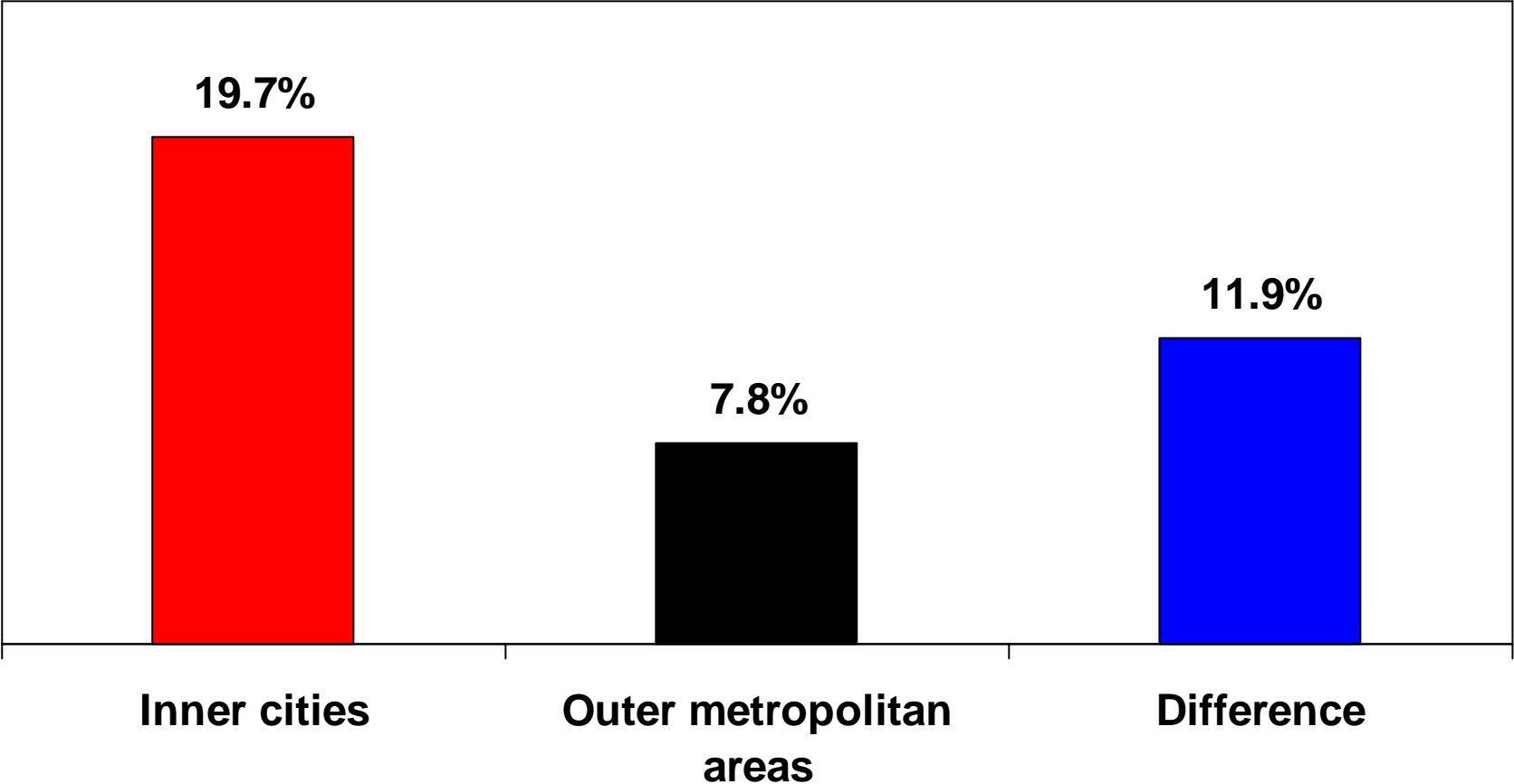
Difference

Key demographic differences between children in inner cities & OMA's in NJ

Characteristic	Inner cities	Outer Metro Area
Income below poverty	28%	9%
Black (non-Hispanic)	36%	11%
Hispanic	49%	11%
Non-citizen in U.S. <5 years	5%	1%
Not living with both parents	57%	28%

Actual vs. predicted geographic coverage disparity for children

11.9 — Actual

15.9 — Predicted

-4.0 — Unexplained

Legend: ■ Actual ■ Predicted ■ Unexplained

Factors accounting for the geographic coverage disparity among children

Total (11.9)
Income (6.7)
Parents (4.6)
Citizenship (3.3)
Hispanic (2.2)
Age (2.2)
Gender (1.3)
Black (-2.7)
Other (-1.9)
Unexplained (-4.0)
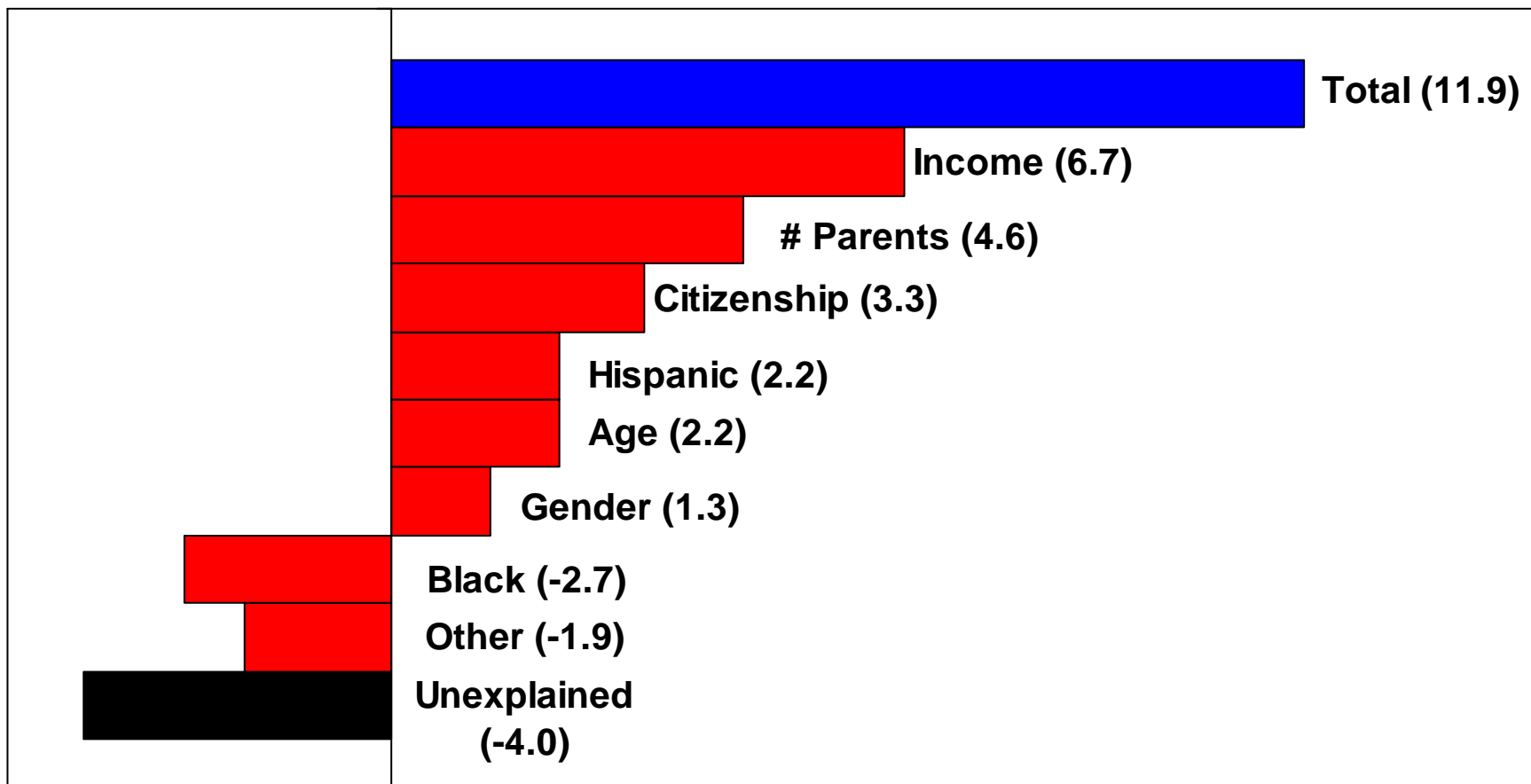
# Differences in "slope effects" for children

- Poverty increases the likelihood of lacking coverage by a smaller amount in inner cities.

- Not having both parents in the home increases the likelihood of lacking coverage by a larger amount in inner cities.

- Being a teenager increases the likelihood of lacking coverage by a larger amount in inner cities.
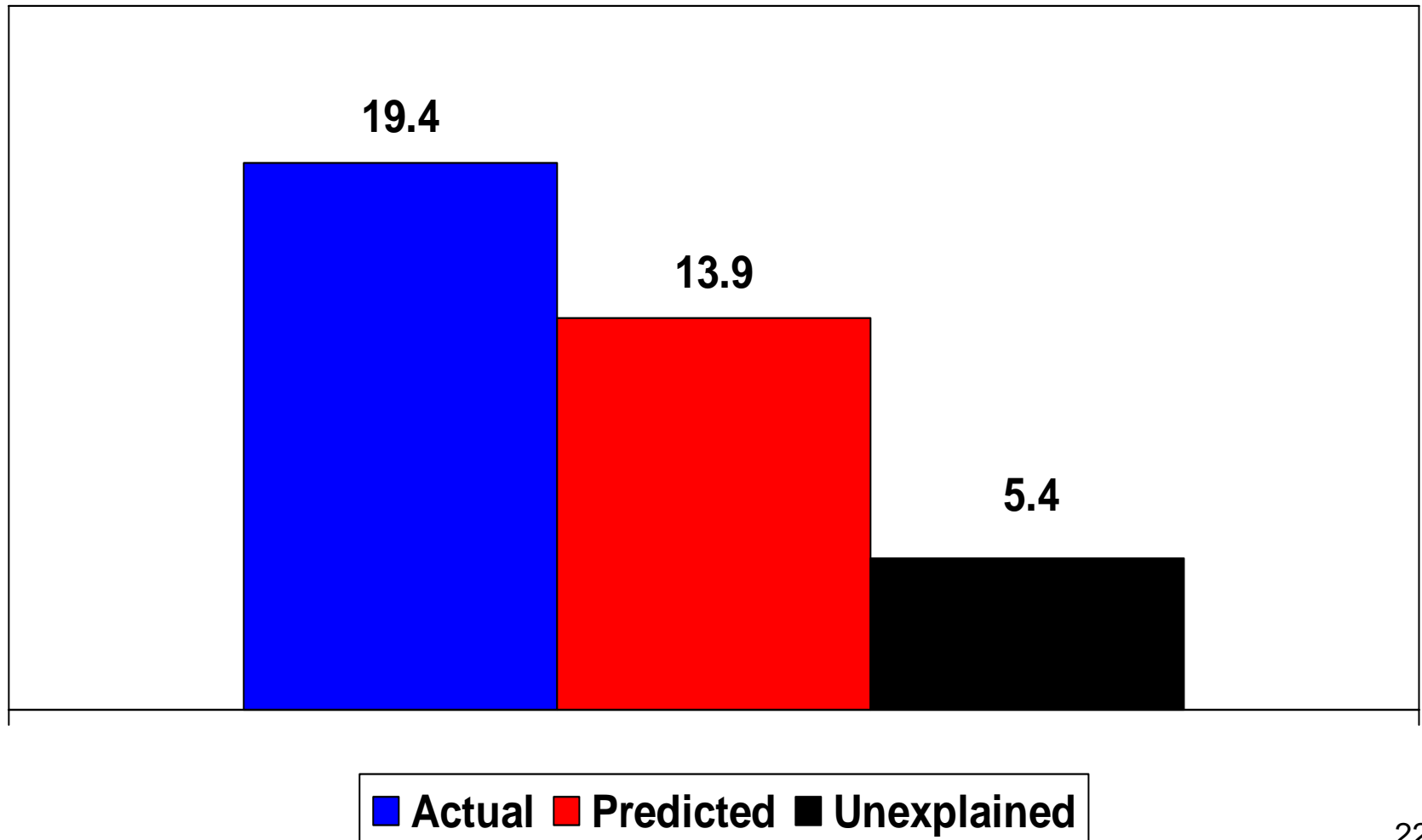
The Geographic Coverage Disparity for Non-elderly Adults

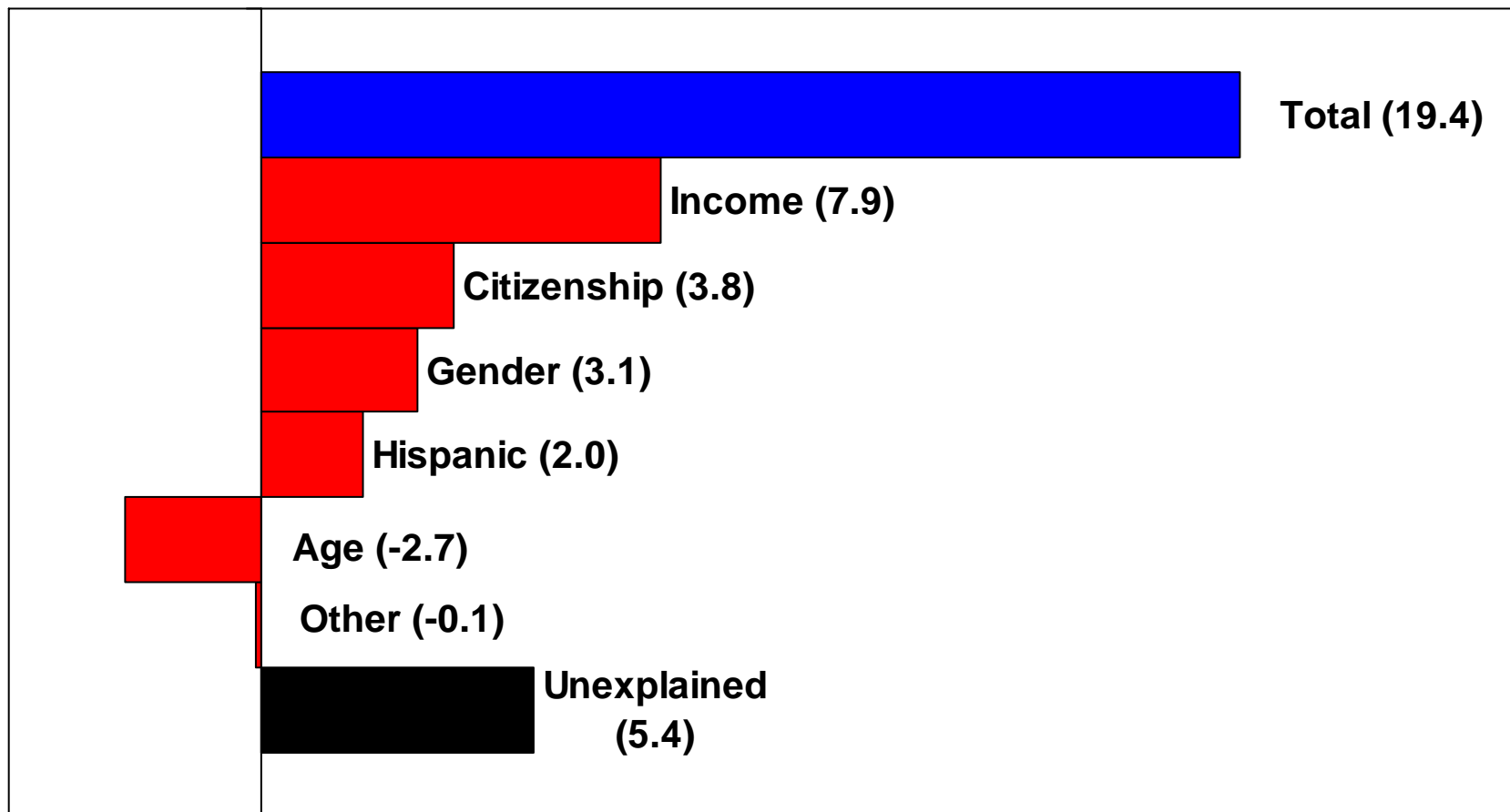# Uninsured Rates for Non-elderly Adults in NJ, 2001

32.5%

13.1%

19.4%

Inner cities

Outer metropolitan areas
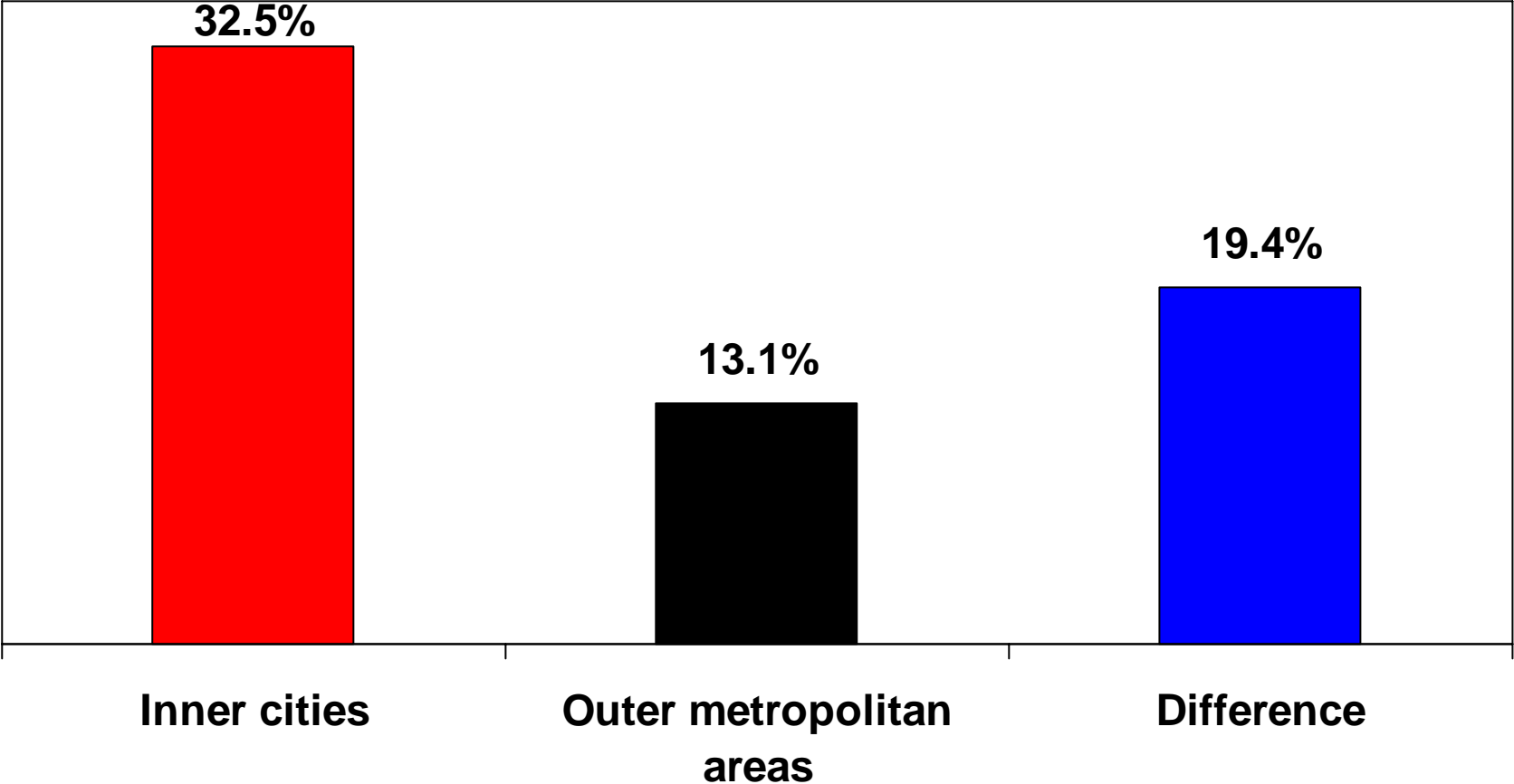
Difference

Key demographic differences between non-elderly adults in inner cities & OMA's in NJ

Characteristic	Inner cities	Outer Metro Area
Poverty	17%	4%
Black (non-Hispanic)	31%	8%
Hispanic	38%	8%
Non-citizen in U.S. <5 years	9%	3%

Actual vs. predicted geographic coverage disparity for non-elderly adults

Actual: 19.4
Predicted: 13.9
Unexplained: 5.4

Legend: ■ Actual ■ Predicted ■ Unexplained

Factors accounting for the geographic coverage disparity among non-elderly adults

Total (19.4)
Income (7.9)
Citizenship (3.8)
Gender (3.1)
Hispanic (2.0)
Age (-2.7)
Other (-0.1)
Unexplained (5.4)

Differences in "slope effects" for non-elderly adults

- Poverty increases the likelihood of lacking coverage by a smaller amount in inner cities.

- Men are more likely to be uninsured than women & the difference is larger in inner cities.

General conclusions

- Lower income in inner cities is the most important factor behind the geographic coverage disparity ==> cost/affordability are major issues

- Citizenship/Hispanic ethnicity also important ==> reaching diverse populations, coverage for immigrants

- Inner city children living without both parents also explains much of the geographic coverage disparity ==> policy options not clear

Conclusions for children

- Geographic coverage disparity is smaller than expected given demographics of inner cities
- May reflect inner city outreach for SCHIP

  KidCare 1998

  FamilyCare 2001

- Effects of poverty less severe in inner cities ==> may also reflect outreach efforts
- What is happening in outer metro/suburban areas?

Discussion

- Geographic coverage disparity is larger than expected given demographics of inner cities

- Excess difference ==> something intrinsic about inner cities or unmeasured individual characteristics

- Poverty "matters less" in inner cities ==> perhaps spillover from SCHIP marketing efforts

Funding

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