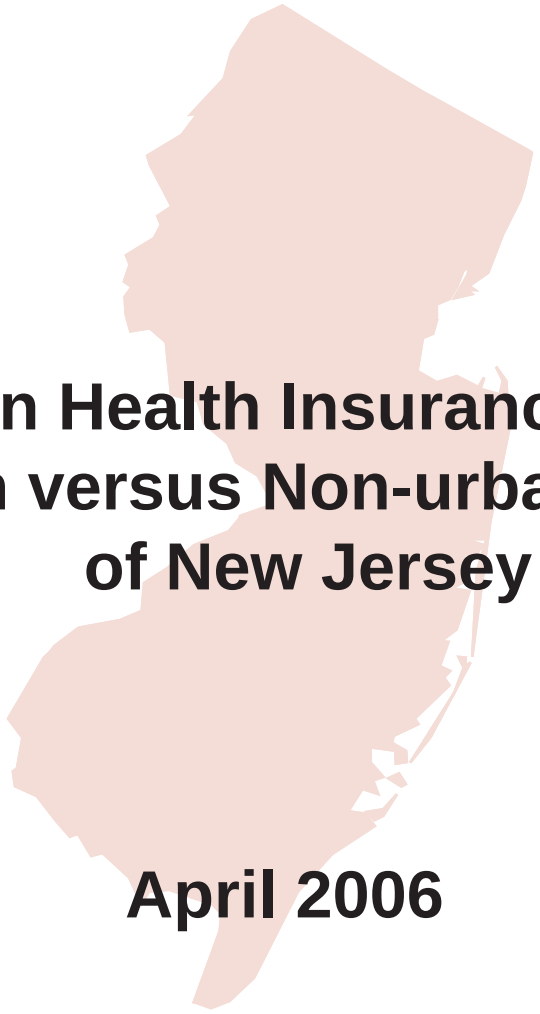

# Disparity in Health Insurance Coverage: Urban versus Non-urban Areas of New Jersey

## April 2006

**State of New Jersey**
**Department of Human Services**

***In Collaboration with***
**Rutgers Center for State Health Policy**

Project funded by the U.S. Department of Health & Human Services,
Health Resources and Services Administration,State Planning Grant # 6 P09 OA 00040-02-01

**State of New Jersey**
**Jon Corzine, Governor**
**Department of Human Services, Kevin M. Ryan, Commissioner**

**Lead Agency**
New Jersey Department of Human Services (NJDHS)

**In Collaboration with**
Rutgers Center for State Health Policy (CSHP)

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# Acknowledgements

This research was funded by the NJ Department of Human Services with a State Planning Grant from the Health Resources and Services Administration, US Department of Health & Human Services. The authors would like to thank members of the State Planning Grant Steering Committee who provided guidance on the direction of the project and preparation of this report. The paper also benefited from comments made by Elena Josephick of the NJ Department of Human Services and participants at the Health Economics Seminar at The Institute for Health, Health Care Policy, and Aging Research at Rutgers University.

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# Disparity in Health Insurance Coverage: Urban versus Non-urban Areas of New Jersey

Derek DeLia, Ph.D.; Dina Belloff, M.A.

## Executive Summary

This report documents the disparity in health insurance coverage between urban and non-urban areas of New Jersey and documents the factors that are most important in explaining why the disparity exists. The data for this analysis come from the New Jersey Family Health Survey, which is a statewide survey of New Jersey Households conducted by the Center for State Health Policy in 2001.

In 2001, the uninsured rate for children (ages 18 and under) living in urban areas of NJ was 19.7% compared to 7.8% in non-urban areas. A number of factors including income, not living with both parents, immigration, and race/ethnicity explain why the disparity in uninsured rates exists. However, the urban coverage disparity for children is actually smaller than one would expect after taking all of these factors into account. In other words, there are other unidentified factors that have a downward effect on the urban coverage disparity for children.

Among all of the factors examined, income is the most important in explaining the coverage disparity among children. Specifically, income explains more than half of the gap in uninsured rates between children in urban and non-urban areas. Nevertheless, the risk of being uninsured among children with income below poverty is smaller in urban areas relative to non-urban areas.

Children in urban areas are also much more likely to live without both parents in the home. This factor accounts for approximately two-fifths of the urban coverage disparity for children. Other important factors include the higher concentration of non-citizen and Hispanic children in urban areas.

In 2001, the uninsured rate for non-elderly adults (ages 19 to 64) living in urban areas of NJ was 32.5% compared to 13.1% in non-urban areas. Unlike the case for children, a significant portion (15-35%) of the urban coverage disparity for adults remains unexplained

after accounting for differences between adults in urban and non-urban areas in terms of income, citizenship, race/ethnicity, gender, and age.

Similar to children, income is the most important factor explaining the urban coverage disparity among adults. Specifically, two-fifths of the coverage gap for adults is explained by income differences between urban and non-urban residents. Also similar to children, the risk of being uninsured among adults with income below poverty is smaller in urban areas relative to non-urban areas.

In addition, one-fifth of the coverage gap is explained by the higher concentration of non-citizen adults living in the state's urban areas. Other important factors include a higher concentration of Hispanics in urban areas and a greater coverage disparity between men and women in urban areas (i.e., higher uninsured rates for men).

It is possible that the lower than expected coverage gap between children in urban and non-urban areas is influenced by successful outreach to populations that are eligible for coverage under NJ KidCare and NJ FamilyCare. This point is underscored by the reduced risk of being uninsured among poor individuals who live in urban areas. Nevertheless, the data available for this report are not sufficient to rigorously determine the true impact of these programs on the urban coverage disparity.

Since the time of this study, a number of factors affecting coverage have changed in NJ. In response to fiscal pressures stemming from the recession of 2001, NJ reduced public health insurance coverage for a number of previously eligible populations. Given the high need in urban areas, these cuts in public benefits have likely affected urban areas disproportionately. Nevertheless, the state has expanded its efforts to reach certain populations of children that remain eligible for public coverage including Hispanic children and other children in situations where English may not be spoken regularly in the home. Since these children are more likely to live in urban areas, these efforts will likely affect uninsured rates more in urban areas.

Also, the recession and slow recovery of jobs that ensued have left a smaller percentage of residents with employer sponsored coverage. It is not clear whether the slow economy has had a different impact on private coverage for urban versus non-urban residents of the state.

Despite efforts to enroll low-income individuals into public programs, income remains the most important factor behind the disparity in uninsured rates between urban and non-urban areas of NJ. This suggests that income-based subsidies would be the most direct and perhaps effective method for expanding coverage in urban areas. In addition to that, special consideration for children in single-parent and immigrant families is also important to address the urban coverage disparity.

# Disparity in Health Insurance Coverage: Urban versus Non-urban Areas of New Jersey

Derek DeLia, Ph.D.; Dina Belloff, M.A.

## Introduction

Lack of health insurance coverage among the non-elderly population is a nationwide problem, which is particularly severe in the nation's inner cities. Anecdotally, individuals living in cities are more likely than their suburban counterparts to lack health insurance. However, the size of the gap in uninsured rates between urban and suburban areas is not well known. Most analysis of geographic differences in uninsured rates focuses on differences between large regions of the United States and between rural and large metropolitan areas. For example, according to the 2001 Current Population Survey, the uninsured rate is 14.2% in metropolitan areas compared to 13.1% in rural areas (Rowley, 2005). Since a metropolitan area includes both inner cities and suburbs, this designation is not useful for measuring the size of the urban coverage disparity between urban and suburban areas.

Accounting for the size of the urban coverage disparity is important to determine where resources for expanding coverage would achieve the greatest benefit. Coverage-related policy would also benefit from an accounting of the major factors that lead to a disparity in coverage between urban and non-urban areas. Specifically, the urban coverage disparity may exist because inner city residents are more likely to have characteristics that are associated with lacking coverage such as low income or belonging to a racial/ethnic minority. In this case, the most effective policy options would focus on the relevant characteristics directly (e.g., income-based subsidies, culturally targeted outreach). Alternatively, there might be something intrinsic to urban areas per se that makes health insurance less available or less likely to be utilized when it is available. For example, low-income urban residents may not find insurance necessary if they believe adequate care is available for little or no cost at nearby health centers or safety net hospitals (Herring, 2005). In this case, the most effective policy options would focus on

geographically targeted outreach or subsidies to employers who hire large numbers of inner city residents.

Also, it is not clear whether the relationship between individual characteristics and coverage is the same in urban and non-urban areas. For example, urban areas typically have higher concentrations of individuals who are poor or belong to a racial or ethnic minority. As a result, there may be more community networks that raise awareness of available public programs and offer assistance in enrollment. If this were the case, then two individuals with very similar individual characteristics could have very different probabilities of being uninsured owing to their residence in an urban or non-urban area.

Addressing urban versus non-urban disparities in the availability of insurance coverage of all types is currently high on the New Jersey policy agenda. In April 2003, Governor James E. McGreevey and Department of Banking and Insurance Commissioner Holly C. Bakke created the *Task Force on Urban Area Insurance* to study the availability, affordability and customer service in a variety of urban insurance markets including automobile, property, and health insurance. The task force has been charged with identifying factors related to various types of insurance coverage that are specific to urban areas, gathering data on insurance practices in NJ cities and developing ways to improve insurance market conditions in urban centers.

To guide policy decisions regarding health insurance coverage for urban populations in NJ, this report provides a comparative analysis of coverage in urban and non-urban areas of the state in 2001. Although New Jersey is considered completely urban by federal statistical agencies, this report provides a methodology for distinguishing between inner city and suburban parts of the state. After defining urban areas, the report measures differences in uninsured rates between urban and non-urban areas of the state, separately for children and non-elderly adults. Econometric methods are used to show the relative contribution of population characteristics (e.g., income, citizenship) to the disparity in coverage between urban and non-urban areas of NJ. If the urban coverage disparity is exclusively the result of differences in population characteristics between urban and non-urban areas, then the disparity will disappear once these characteristics are taken into account. Alternatively, if the urban coverage disparity is influenced by factors that are intrinsic to inner cities, then a significant disparity will

remain even after individual characteristics are taken into account. The report concludes with a discussion of policy implications for NJ and other states.

## Research Methods and Data

National analyses of geographic differences in uninsured rates focus primarily on differences between urban, rural, and frontier areas of the United States (Kaiser Commission on Medicaid and the Uninsured, 2003; McBride, 2004). This approach is not useful for NJ, since the entire state is classified by U.S. Census Bureau as belonging to a Metropolitan Statistical Area (MSA) – i.e., the Philadelphia MSA in the south and the New York MSA in the north. Although the state is heavily urbanized and densely populated, there are specific areas of NJ that are clearly less urban or, in some cases, rural. These areas have populations and infrastructures that contrast sharply with the environments of the state's major cities such as Newark and Jersey City.

To separate urban from non-urban areas of NJ, the analysis below relies on smaller geographic units defined by the U.S. Census Bureau as "places" (U.S. Census Bureau, 2005). Places are geographic units that correspond to incorporated cities and towns. Some places that are not officially incorporated are given the distinction of Census Defined Place (CDP). Census places are sometimes used to define "urban clusters", which are areas of block groups within places that meet certain population and population density criteria. Specifically, urban clusters are defined as areas with population between 2,500 and 49,999 people with population density of at least 1,000 people per square mile (PPSM) in the core block group and at least 500 PPSM in adjacent block groups.

For NJ, this definition is not very useful, since the vast majority of places in the state easily satisfy these criteria. Therefore, stricter criteria are needed to classify places in NJ as urban. To begin, this report classifies NJ places as urban if they have a population of at least 25,000 and population density of at least 9,000 PPSM. This definition provides an intuitive classification as large cities such as Newark, Jersey City, and Camden are labeled as urban, while places in relatively more remote parts of the state

(e.g., in Sussex and Salem Counties) are classified as non-urban. By this definition, 22% of NJ residents were living in urban areas in 2000.

The specification of exact population and population density thresholds is clearly arbitrary. To determine whether the findings of this report are sensitive to these thresholds, alternative definitions of urban areas are also considered. Specifically, places in NJ are classified as urban according to nine sets of population and population density criteria. These criteria correspond to population thresholds of 20,000; 25,000; and 30,000 and population density thresholds of 8,000; 9,000; and 10,000 PPSM. The places that are classified as urban under each set of thresholds are listed in Appendix A.

Overall, the major findings of the report are not sensitive to the thresholds used to define urban areas. Therefore, only the findings with the original criteria – i.e., 25,000 for population and 9,000 for population density – are presented. Occasional exceptions are noted in the text of the findings section.

After defining urban areas, the uninsured rate for individuals living in urban and non-urban areas is calculated. Separate analyses are done for children (ages 18 and under) and for non-elderly adults (ages 19 to 64). Elderly individuals (age 65 and over) are excluded from the analysis, since most of the elderly are covered by Medicare.

The urban coverage disparity is measured as the difference in uninsured rates between residents of urban and non-urban areas. Separate calculations of the urban coverage disparity are made for each definition of urban area described above.

The influence of individual characteristics on the urban coverage disparity is measured using regression decomposition (Blinder, 1973). Specifically, a linear regression model is used to predict the likelihood that an individual is uninsured based on the characteristics of that individual (e.g., income, race, and others described below). Separate models are estimated for urban and non-urban residents. Using the average characteristics of urban and non-urban residents and the estimated slope coefficients from the regression models, the disparity in uninsured rates is decomposed into components that reflect these differences in individual characteristics and slope coefficients.

Specifically, the difference in the uninsured rate between urban and non-urban areas can be written as the sum of the following components:

1. Differences due to mean effects, which are differences in individual characteristics (e.g., percent with income below poverty) times the average effect of each characteristic on the uninsured rate (e.g., the average slope of the poverty variable in the two models predicting the likelihood of lacking insurance).
2. Differences due to slope effects, which are differences in the effects (i.e., slopes) of each characteristic times the average value of the characteristic (e.g., the average percentage with income below poverty in urban and non-urban areas combined).
3. Unexplained difference – i.e., the part of the disparity that remains after accounting for component 1 and 2.

To illustrate the method, suppose (hypothetically) that a characteristic such as poverty appears in 30% of the urban population and 10% of the non-urban population. Suppose further that poverty increases the uninsured rate by 10 percentage points in the urban population and by 5 percentage points in the non-urban population. The mean effect of poverty would be (0.3-0.1) times (0.1+0.05)/2, which equals 0.015 or 1.5 percentage points. The slope effect would be (0.1-0.05) times (0.3+0.1)/2, which equals 0.01 or 1 percentage point. The total effect of poverty would be 2.5 percentage points. This amount could then be compared to the total difference in uninsured rates and the effects of other factors (e.g., race, immigration) to determine the most important reasons for the coverage disparity. More details about the specification and validity of the regression decomposition model are presented in Appendix B.

A number of individual characteristics are considered in the regression decomposition model. These include income, race/ethnicity, citizen status, gender, and age. Income is defined in terms of the Federal Poverty Level (FPL).[1] Specifically, individuals are placed in one of four categories based on family income – 0 to 100% of FPL, 101 to 200% of FPL, 201 to 350% of FPL, or greater than 350% of FPL. Race/ethnicity categories are white non-Hispanic, black non-Hispanic, Hispanic, and all other. Citizen categories are U.S. born citizen, foreign born U.S. citizen, non-citizen in the U.S. for less than five years, and non-citizen in the U.S. for five years or more. The categories for non-citizens were chosen to reflect time thresholds that must be met before non-citizen immigrants are able to access public benefits such as Temporary Assistance to Needy Families (TANF) and Medicaid. For children there are two age categories – 0 to

12 and 13 to 18. For non-elderly adults, there are three age categories – 19 to 25, 26 to 45, and 46 to 64.

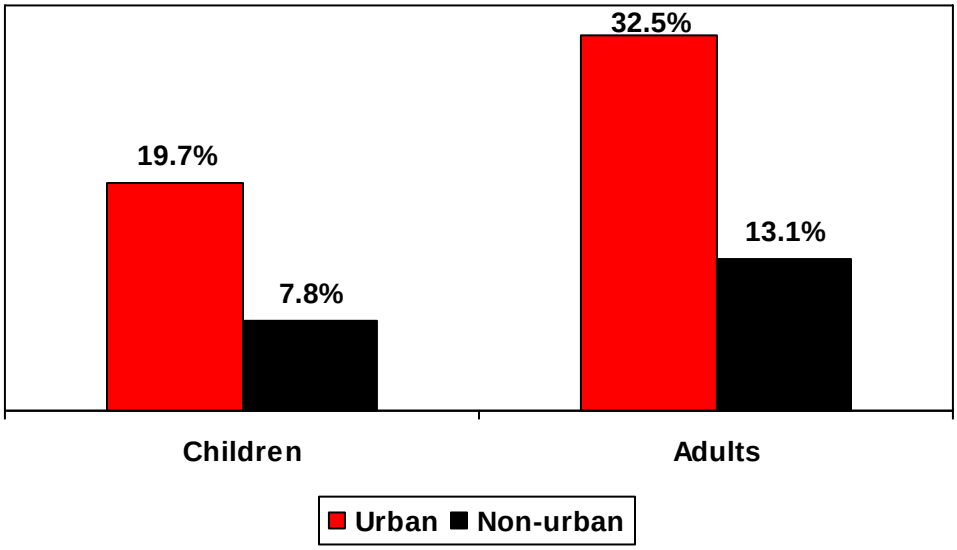
One additional variable is included for children to indicate whether at least one parent is not present in the household.[2] Previous research has shown that children who do not live with both parents are at greater risk for being uninsured (Weigers, Weinick, and Cohen, 1998). Also, as shown in the data below, children living without both parents in the household are also more likely to live in urban areas.

Data for this analysis are derived from the New Jersey Family Health Survey (NJFHS). The NJFHS is a statewide survey funded by the Robert Wood Johnson Foundation, which contains a representative sample of 2,264 New Jersey families including more than 6,500 individuals who were interviewed in 2001. Among other issues, the survey inquired about health care coverage, access to care, health status, health service utilization, demographics, and employment status. To enable in-depth analysis of vulnerable populations, the survey over-sampled low-income families (under 200% of the federal poverty level) and those with members age 65 or older. The survey had a response rate of 59.4% and supports estimates for regions within the state. The analysis below is based on 1,984 observations for children and 3,502 observations for non-elderly adults.

## Findings

Chart 1 shows uninsured rates for children and adults in urban and non-urban areas. In both cases, the uninsured rate is significantly higher in urban versus suburban areas. The absolute size of the disparity is larger for adults – a difference of 11.9 percentage points for children and 19.4 percentage points for adults. In relative terms, however, the disparity is fairly similar for children and adults. For both adults and children, the urban uninsured rate is about 2.5 times as large as the non-urban uninsured rate. These findings are consistent across the alternative thresholds used to define urban areas (described above).

**Chart 1: Uninsured rates for children and adults in urban and non-urban areas**




## Findings for Children

Table 1 shows differences in individual characteristics of children living in urban and non-urban areas that may influence the likelihood of being uninsured. In most cases, children in urban areas are more likely to have characteristics associated with a higher likelihood of lacking coverage. Specifically, children in urban areas are more likely to have income below or near poverty, belong to a racial or ethnic minority group, and be born outside of the United States. Children in urban areas are also much more likely to live in a household without both parents.

One exception is that children in urban areas are less likely to be teenagers. The national literature has produced conflicting findings with regard to uninsured rates for teenagers versus younger children. Moyer (1998) found that teenagers had a higher uninsured rate than younger children in 1997. Analysis sponsored by the Robert Wood Johnson Foundation (2005) found that in 2003, the uninsured rate for teenagers was higher than the corresponding rate for children under the age of 6 but lower than the uninsured rate for children ages 6 to 12. Therefore, it is impossible to say a priori what effect the lower percentage of teenagers in urban areas is likely to have on the urban coverage disparity among children.

Finally, children in urban areas are slightly less likely to be males. Although gender is not a factor in determining program eligibility, the analysis below shows that for children gender is a factor that predicts the likelihood of lacking coverage.

**Table 1: Differences in individual characteristics of children living in urban and non-urban areas**

| Characteristic | Urban | Non-urban |
|---|---|---|
| Income: 0-100% FPL | 28% | 9%[a] |
| Income: 101-200% FPL | 41% | 21%[a] |
| Income: 201-350% FPL | 24% | 33%[a] |
| Black non-Hispanic | 35% | 11%[a] |
| Hispanic | 49% | 11%[a] |
| Other non-white | 4% | 6% |
| Citizen born outside of U.S. | 3% | 0%[a] |
| Non-citizen in U.S. for less than 5 years | 6% | 1%[a] |
| Non-citizen in U.S. for 5 or more years | 2% | 1% |
| Male | 48% | 56%[b] |
| Age13-18 | 28% | 32% |
| Not living with both parents | 57% | 28%[a] |

[a] The difference between urban and non-urban areas is statistically significant at the 1% level.
[b] The difference between urban and non-urban areas is statistically significant at the 5% level.

The characteristics in Table 1 were used to decompose the difference in uninsured rates between urban and non-urban areas. The analysis shows that differences in individual characteristics generate an expected difference of 15.9 percentage points in the uninsured rate between urban and non-urban areas (Chart 2). This number is larger than the actual difference of 11.9, which suggests that the urban coverage disparity for children is actually smaller than one would expect based on the characteristics of children living in the different areas. In other words, if there were no other differences between children in urban and non-urban areas beyond those listed in Table 1, then the urban coverage disparity would be 15.9 percentage points. In reality, the disparity is only 11.9

percentage points, which means there are other unmeasured factors in urban areas that have a negative impact on the uninsured rate. This leaves 4.0 percentage points of difference unexplained by the factors included in the model.

**Chart 2: Actual versus explained difference in uninsured rates based on demographic characteristics: Children in New Jersey**

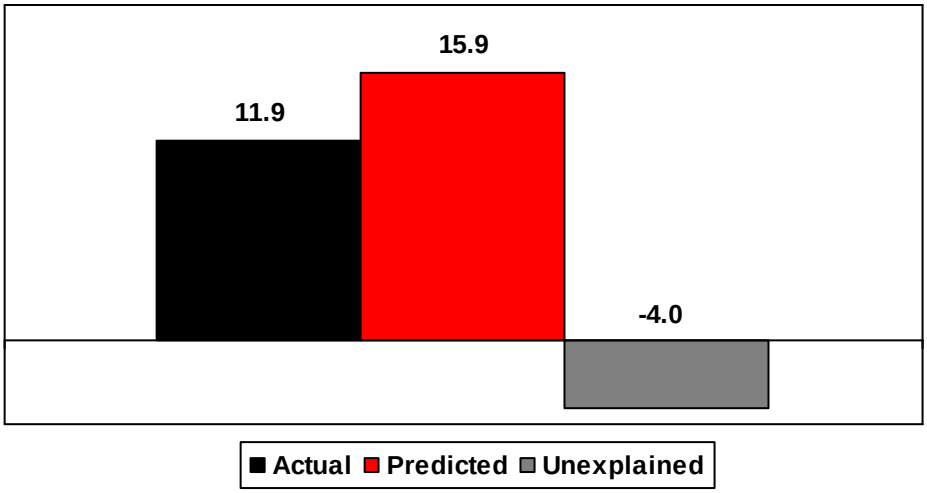


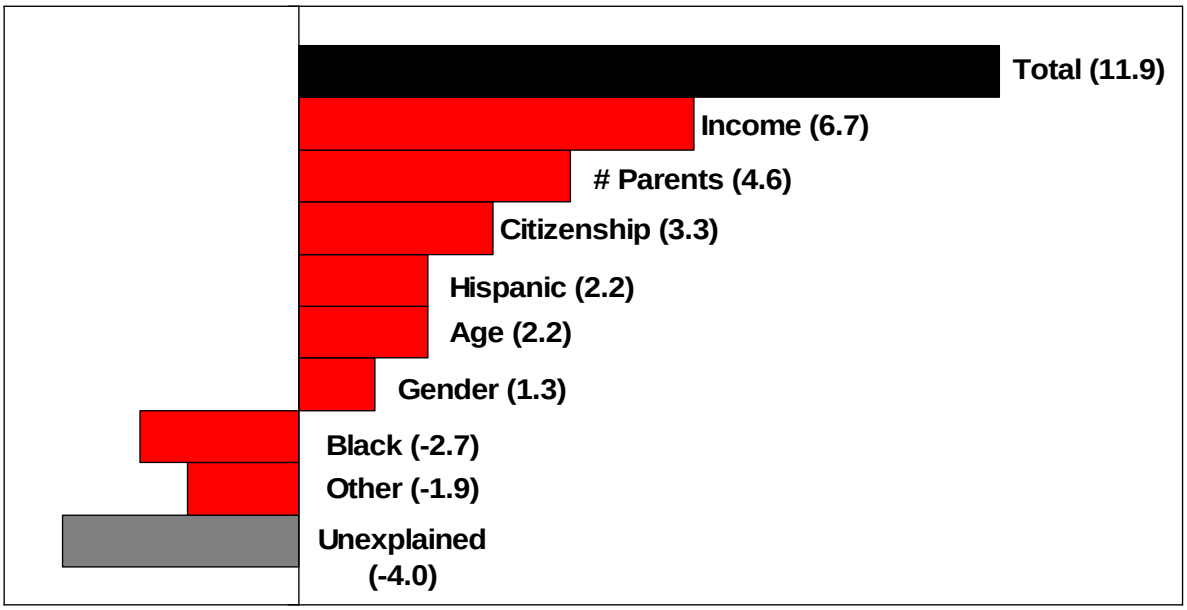

Chart 3 provides details on how much of the urban coverage disparity is accounted for by different factors. Income differences between children in urban and non-urban areas account for the largest portion of the urban coverage disparity – 6.7 out of 11.9 total percentage points. This finding is consistent across all definitions of urban area described below. Most of the income effect is driven by differences in the percentage of children falling into the near poor category (101-200% of the FPL) and the moderate income category (201-350% of the FPL).

While urban areas also have a higher percentage of children living in families with income below poverty, the effect of poverty on the uninsured rate is less severe in urban areas. This is shown by comparing the mean, slope, and total effects in Table 2. As defined above the mean affect measures the amount of the urban coverage disparity that is attributable to differences in the average level of a characteristic such as income. Notice that the mean effects are similar for income below poverty (2.5 percentage points) and income between 101% and 200% of the FPL (2.5 percentage points). However, the

total effects are different due to the negative slope effect for income below poverty (0.7 versus 3.0 percentage points). The negative slope effect (-1.8 percentage points) shows that poverty increases the likelihood of lacking insurance by a smaller amount in urban areas compared to non-urban areas. As a result, the total effect of poverty (0.7 percentage points) is smaller than the total effect of near poverty (3.0 percentage points) in contributing to the urban coverage disparity for children.

The impact of having income in the range of 201-350% of the FPL level is different. In the linear regression models, income effects are measured relative to children in families with income above 350% of the FPL. Compared to this higher income group, children with income in the 201-350 range are more likely to be uninsured. Since a smaller percentage of children in urban areas fall into this income group, the mean effect is negative (-1.3 percentage points). However, the positive slope effect (4.4 percentage points) suggests that children with moderate income in urban areas face a greater relative risk of being uninsured compared to children with moderate income in non-urban areas. Altogether this creates a positive total effect on the urban coverage disparity for children (3.1 percentage points).

**Chart 3: Factors that account for the urban coverage disparity among children in New Jersey**




The second most important factor is not living with both parents. This factor accounts for 4.6 of the total 11.9 percentage point disparity in coverage. Children in urban areas are more likely to live without at least one parent as illustrated by the mean effect of 1.7 in Table 2. Also, the effect of living without at least one parent is stronger in urban areas as shown by the slope effect of 2.9 in Table 2.

The next most important factors are citizenship, accounting for 3.3 percentage points, and Hispanic ethnicity, accounting for 2.2 percentage points (Chart 2). Not surprisingly, there is a significant amount of overlap between the Hispanic and non-citizen populations making it difficult to disentangle the "Hispanic effect" from the "non-citizen effect". As a result, the relative ranking of the Hispanic effect and citizenship effect is sensitive to the population and population density thresholds used to define urban areas. Nevertheless, in all models these two variables rank below income and living without both parents and above other variables in order of influence on the urban coverage disparity for children.

The Hispanic effect is driven almost exclusively by the higher percentage of Hispanic children living in urban areas – i.e., the mean effect in Table 2. In contrast, the non-citizen effect is driven by a combination of mean and slope effects. More importantly, non-citizens who have been in the U.S. for less than five years have a much greater influence on the urban coverage disparity than non-citizens who have been in the U.S. for a longer period of time.

**Table 2: Decomposition of uninsured rate by individual characteristics: Children in NJ, 2001**

| Variable | Mean effect[a] | Slope effect[b] | Total effect[c] |
|---|---|---|---|
| Income: 0-100% FPL | 2.5 | -1.8 | 0.7 |
| Income: 101-200% FPL | 2.5 | 0.5 | 3.0 |
| Income: 201-350% FPL | -1.3 | 4.4 | 3.1 |
| Black non-Hispanic | -1.9 | -0.8 | -2.7 |
| Hispanic | 2.6 | -0.4 | 2.2 |
| Other non-white | -0.1 | -1.1 | -1.1 |
| Citizen born outside of U.S. | -0.1 | -0.6 | -0.7 |
| Non-citizen in U.S. for less than 5 years | 1.6 | 1.0 | 2.5 |
| Non-citizen in U.S. for 5 or more years | 0.1 | 0.7 | 0.8 |
| Male | -0.1 | 1.4 | 1.3 |
| Age13-18 | -0.3 | 2.6 | 2.2 |
| Not living with both parents | 1.7 | 2.9 | 4.6 |
| | | | |
| Total effects | 7.1 | 8.8 | 15.9 |

[a] Percentage point difference between urban and non-urban populations. Positive numbers indicate a higher percentage in urban areas.
[b] Percentage point difference in slopes between variable and likelihood of being uninsured. Positive numbers indicate a larger slope (i.e., stronger relationship to the likelihood of being uninsured) in urban areas.
[c] Sum of mean and slope effects.

Age and gender exert a smaller influence on the urban coverage disparity for children. This finding is consistent across the different thresholds used to define urban areas, although in some cases, gender effects are larger than age effects and vice versa. In all cases, the influence of age works almost exclusively through slope effects. Specifically, there is no difference in the age distribution among children in urban and non-urban areas leading to a negligible mean effect for age (-0.3 of a percentage point). However, teenagers in urban area face a much higher risk of being uninsured relative to younger children than teenagers in non-urban areas. This leads to a fairly large slope effect (2.6 percentage points).

A similar pattern appears for gender. Specifically, there is little difference in the percentage of children who are boys in urban versus non-urban areas, which leads to a negligible mean effect (-0.1 of a percentage point). However, boys in urban areas face a higher risk of being uninsured relative to girls than boys in non-urban areas.

Somewhat surprisingly, non-Hispanic black children have a lower risk of being uninsured relative to non-Hispanic white children after controlling for income and other factors in the model. As a result, the higher concentration of non-Hispanic black children in urban areas leads to a reduction in the urban coverage disparity. Although this finding is consistent across all of the criteria used to define urban and non-urban areas, the relationship between black race and lack of insurance is often statistically insignificant. The other category in Chart 3 consists of citizens born outside of the U.S. and non-white non-Hispanic children. Together these variables exert small downward influences on the urban coverage disparity in all of the models examined.

## Findings for Adults

Adults living in urban areas are more likely than adults in non-urban areas to have socioeconomic characteristics that are associated with lacking health insurance (Table 3). Specifically, adults in urban areas are more likely to have income below or near poverty, belong to a racial or ethnic minority group, and be born outside of the United States. Also, non-elderly adults in urban areas are somewhat younger than their counterparts in

non-urban areas. They are less likely to be ages 46-64 and more likely to be ages 19-25 but equally likely to be ages 26-45.

**Table 3: Differences in individual characteristics of non-elderly adults living in urban and non-urban areas**

| Characteristic | Urban | Non-urban |
|---|---|---|
| Income: 0-100% FPL | 16% | 4%[a] |
| Income: 101-200% FPL | 35% | 14%[a] |
| Income: 201-350% FPL | 26% | 31%[b] |
| Black non-Hispanic | 31% | 8%[a] |
| Hispanic | 39% | 8%[a] |
| Other non-white | 4% | 8% |
| Citizen born outside of U.S. | 14% | 8%[a] |
| Non-citizen in U.S. for less than 5 years | 9% | 3%[a] |
| Non-citizen in U.S. for 5 or more years | 9% | 3%[a] |
| Male | 46% | 47% |
| Age 26-45 | 50% | 49% |
| Age 46-64 | 29% | 38%[a] |

[a] The difference between urban and non-urban areas is statistically significant at the 1% level.
[b] The difference between urban and non-urban areas is statistically significant at the 5% level.

The characteristics in Table 3 were used to decompose the disparity in uninsured rates for non-elderly adults in urban and non-urban areas. Chart 4 shows that 13.9 of the 19.4 percentage point disparity is explained by differences in individual characteristics. This leaves 5.4 percentage points, or 28% of the total disparity, unexplained. When different criteria are used to define urban areas, the unexplained portion varies from 15% to 35% of the total urban coverage disparity for adults. In general, the unexplained portion falls when the population density threshold is increased but is unaffected by the total population threshold. In any case, a significant portion of the urban coverage disparity for adults is attributable to factors that are intrinsic to inner cities or characteristics of individuals that are not measured in this analysis.

**Chart 4: Actual versus explained difference in uninsured rates based on demographic characteristics: Adults in New Jersey**

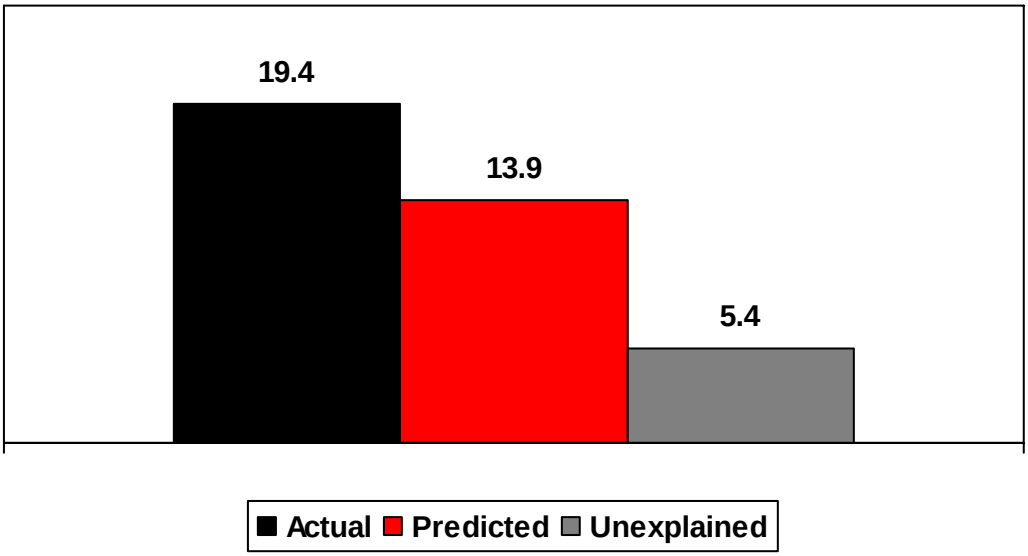
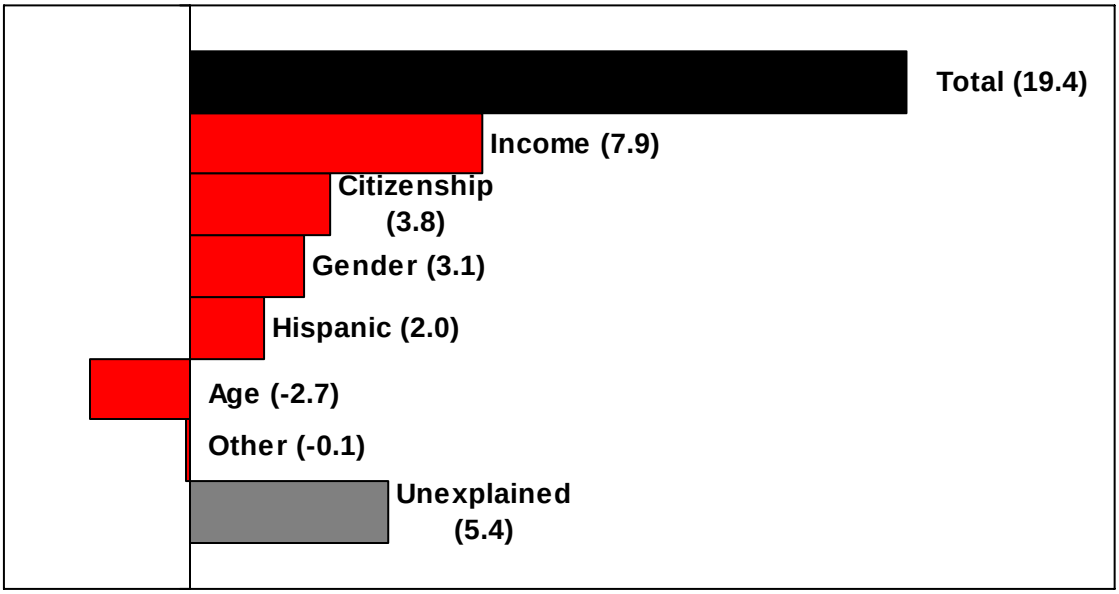



Chart 5 provides details on how much of the urban coverage disparity for adults is accounted for by different factors. Similar to the case for children, income is the most important factor driving the urban coverage disparity for adults. Altogether 7.9 of the 19.4 percentage point difference in uninsured rates is linked to lower income in urban areas. Similar results are obtained across all the criteria used to define urban areas. As shown in Table 4, most of this income effect (5.1 percentage points) is attributable to the higher percentage of individuals in urban areas with income near poverty (i.e., between 101% and 200% of the FPL). As in the case for children, living in poverty increases the risk of lacking coverage by a smaller amount in urban areas – i.e., the slope effect of -1.1 diminishes the total effect of poverty to 1.9 percentage points.

**Chart 5: Factors that account for the urban coverage disparity among adults in New Jersey**




The combination of mean and slope effects for adults with income between 201 and 350% of the FPL are also similar to what is observed for children. The mean effect is negative, since there is a smaller percentage of adults in this income category in urban areas. But the slope effect is positive indicating that adults with moderate income in urban areas face a greater relative risk of being uninsured compared to adults with moderate in income in non-urban areas. Nevertheless, the mean and slope effects for this income group almost cancel each other out leaving a fairly small total effect of just under one percentage point.

The higher concentration of non-citizens in urban areas accounts for the next largest portion (3.8 percentage points) of the urban coverage disparity for adults (Chart 5). This finding is also consistent across all criteria used to define urban areas. As shown in Table 4, the contribution of this factor to the disparity is split almost evenly between non-citizen residents in the U.S. for less than five years versus those in the U.S. for five or more years. The influence of those in the U.S. for less than five years is driven mainly by mean effects, while the influence of those in the U.S. for more than five years is split equally between mean and slope effects.

Hispanic ethnicity and gender are the next important factors in explaining the urban coverage disparity for adults (Chart 5). The ranking of these factors in terms of their influence on the disparity is somewhat sensitive to the definition of urban area. The Hispanic influence is driven mainly by the mean effect reflecting the higher concentration of Hispanic adults in urban areas (Table 4). The slope effect for Hispanics offsets the mean effect slightly.

**Table 4: Decomposition of uninsured rate by individual characteristics: Adults in NJ, 2001.**

| **Variable** | **Mean effect[a]** | **Slope effect[b]** | **Total effect[c]** |
|---|---|---|---|
| Income: 0-100% FPL | 2.9 | -1.1 | 1.9 |
| Income: 101-200% FPL | 5.5 | -0.4 | 5.1 |
| Income: 201-350% FPL | -0.7 | 1.6 | 0.9 |
| Black non-Hispanic | -0.1 | 0.2 | 0.1 |
| Hispanic | 2.8 | -0.8 | 2.0 |
| Other non-white | 0.0 | 0.0 | 0.1 |
| Citizen born outside of U.S. | 0.1 | -0.4 | -0.4 |
| Non-citizen in U.S. for less than 5 years | 1.9 | 0.0 | 1.8 |
| Non-citizen in U.S. for 5 or more years | 0.9 | 1.0 | 2.0 |
| Male | -0.1 | 3.2 | 3.1 |
| Age 26-45 | -0.2 | -1.1 | -1.3 |
| Age 46-64 | 1.3 | -2.8 | -1.4 |
| | | | |
| Total | 14.5 | -0.6 | 13.9 |

[a] Percentage point difference between urban and non-urban populations. Positive numbers indicate a higher percentage in urban areas.
[b] Percentage point difference in slopes between variable and likelihood of being uninsured. Positive numbers indicate a larger slope (i.e., stronger relationship to the likelihood of being uninsured) in urban areas.
[c] Sum of mean and slope effects.

Since there is no difference in the gender distribution for urban and non-urban adults, gender influences the urban coverage disparity for adults through slope effect alone. Specifically, men in urban areas face a higher risk of being uninsured (relative to women) than men in non-urban areas.

For reasons that are somewhat complicated, age differences between residents of urban and non-urban areas have a downward effect of 2.7 percentage points on the urban coverage disparity for adults (Chart 5). There is a lower percentage of residents ages 46-64 in urban areas. Since adults in this age group are less likely to be uninsured than younger adults, this factor has an upward effect on the urban coverage disparity (Table 4). However, the difference in uninsured rates between very young and other adults is larger (i.e., the slope is more negative) in urban areas. Since the slope effect is larger than the mean effect, differences in the population ages 46 to 64 decreases the urban coverage disparity. Although there is no difference in the percentage of urban and non-urban residents who are ages 26 to 45, the negative slope effect for this age group adds another downward influence on the coverage disparity.

The other category in Chart 5 consists of citizens born outside of the U.S., non-Hispanic black adults, and non-white non-Hispanic adults. Together these variables exert a negligible influence on the urban coverage disparity in all of the models examined.

## Discussion

The analysis above documents large disparities in uninsured rates for both adults and children in urban versus non-urban areas. In the case of children, there does not appear to be anything intrinsic about living in an inner city that leads to high rates of uninsurance. In fact, children in urban areas have an uninsured rate that is less than one would expect given their socioeconomic circumstances. These circumstances include poverty or low income, not living with both parents, lack of citizenship, and Hispanic ethnicity – all of which are strongly associated with lacking health insurance.

The lower-than-expected uninsured rate may reflect successful outreach to children who live in urban areas and are eligible for public insurance coverage. The analysis in this report is based on data from New Jersey in 2001. By that time NJ KidCare

had been well established with outreach efforts targeting areas of high need, which are disproportionately found in inner city areas. Also, in October of 2001, the state introduced NJ FamilyCare with a new round of outreach efforts to these areas. Nevertheless, the data available for this report are not sufficient to rigorously determine the true impact of these programs on the urban coverage disparity. Therefore, further investigation is required to determine whether the lower-than-expected disparity is truly associated with these activities.

More than half of the urban coverage disparity for children is accounted for by income – i.e., children in inner cities are much more likely to be in families that are poor or have very limited income. Nevertheless, this report also finds that children who live in poverty have a slightly reduced risk of being uninsured than their counterparts in non-urban areas. This may again reflect outreach efforts alluded to above. Alternatively, poor families living in urban areas may have more access to information about existing coverage opportunities due to their proximity to others with low income and institutions that promote public coverage such as hospitals, health centers, and community service organizations.

Another significant contributor to the urban coverage disparity for children is related to the number of parents who live in the child's home. Even after adjusting for income and other factors, children living with both parents are more likely to have coverage. This finding is consistent with the idea that it is easier for two parents to find coverage and enroll a child into a health plan than it would be for a single parent. In addition, children who do not live with both of their parents are also more likely to live in urban areas. This factor alone accounts for 39% of the urban coverage disparity for children in NJ. Therefore, effective strategies to decrease the urban coverage disparity require some consideration of the circumstances faced by children who are not living with both parents.

The concentration of Hispanics and non-citizen immigrants in urban areas are also important contributors to the urban coverage disparity among children. These demographic factors are consistently associated with high uninsured rates nationwide. NJ has been comparatively liberal in its coverage with state funding of immigrant children who are legally admitted for permanent residence regardless of their date of entry.

Nevertheless, barriers pertaining to language, culture, and general awareness of coverage options likely play a role in driving the urban coverage disparity as it pertains to Hispanic and immigrant children.

This research also found that teenagers and boys face a greater relative risk of being uninsured in urban areas compared to their counterparts in non-urban areas. It is possible that urban outreach for public programs may have been more successful among parents of younger children who tend to have more routine medical needs. Nevertheless, the reasons for these findings, particularly with regard to boys, remain unclear.

For adults, most but not all of the urban coverage disparity is explained by individual characteristics of urban residents (i.e., income, race/ethnicity, citizenship/immigration, gender, and age). Overall 15-35% of the urban coverage disparity for adults remains unexplained by these characteristics (depending on the assumptions that are made to define places in NJ as urban versus non-urban).

As in the case for children, income is the primary factor that explains the largest share (41%) of the urban coverage disparity for adults. Adults living in or near poverty generally have limited access to affordable private coverage and are often not eligible for public coverage. This is particularly true for adults without children and for non-citizens.

The higher concentration of adults who are Hispanic and/or non-citizens in urban areas also accounts for large proportions (10% and 20%, respectively) of the urban coverage disparity. This finding likely reflects a combination of ineligibility for public programs and barriers to enrollment for adults who are eligible.

The analysis also found that men in urban areas face a significantly greater risk of being uninsured than men in non-urban areas. Prior research has shown that men are typically more likely to be uninsured than women (Meyer, 2003). This may be influenced by the enrollment of pregnant women and mothers of young children in the Medicaid program. It is likely that women in these circumstances are more commonly found in urban areas. If so, then this would explain the larger coverage gap between men and women in urban areas.

Many circumstances affecting coverage have changed since the year 2001, which is when the data for this report were collected. In 2001, the national economic expansion begun in 1992 had come to an end. During the recession that ensued, many jobs that

offered employer sponsored health insurance were lost and have not been replaced since the recession ended in 2002 (Hill, 2004). Because of fiscal problems associated with the recession, New Jersey froze enrollment in NJ FamilyCare for childless adults in September of 2001 and for parents in June of 2002. Although children retained their eligibility, their coverage may have been affected indirectly, since children who are eligible for public coverage are less likely to be enrolled when their parents are uninsured (Institute of Medicine, 2002). Given the high need in urban areas, these cuts in public benefits have likely affected urban areas disproportionately. Also, it is not clear whether the recent recession has had a different impact on private coverage for urban versus non-urban residents of New Jersey.

There are some changes in New Jersey's health policy environment that may have favored urban parts of the state. Specifically, the state has expanded its efforts to reach Hispanic children and other children in situations where English may not be spoken regularly in the home. Since these children are more likely to live in urban areas, these efforts will likely decrease uninsured rates more in urban areas.

As the national economy continues to create jobs at a slow pace, the major issues outlined in this report are likely to remain. Despite efforts to enroll low-income individuals into public programs, income remains the most important factor behind the disparity in uninsured rates between urban and non-urban areas of NJ. This suggests that income-based subsidies would be the most direct and perhaps effective method for expanding coverage in urban areas. In addition to that, special consideration for children in single-parent and immigrant families is also important to address the urban coverage disparity.

# Appendix A

**Appendix A: Places[a] in NJ Designated as Urban Under Alternative Population and Population Density Criteria**

| **Population cutoff[b]** | **20,000** | | | **25,000** | | | **30,000** | | |
|---|---|---|---|---|---|---|---|---|---|
| **Population density cutoff[c]** | **8,000** | **9,000** | **10,000** | **8,000** | **9,000** | **10,000** | **8,000** | **9,000** | **10,000** |
| **Place** | | | | | | | | | |
| Bayonne city | X | X | X | X | X | X | X | X | X |
| Belleville CDP | X | X | X | X | X | X | X | X | X |
| Belleville township | X | X | X | X | X | X | X | X | X |
| Bergenfield borough | X | X | | X | X | | | | |
| Bloomfield CDP | X | | | X | | | X | | |
| Bloomfield township | X | | | X | | | X | | |
| Camden city | X | X | | X | X | | X | X | |
| City of Orange township | X | X | X | X | X | X | X | X | X |
| Cliffside Park borough | X | X | X | | | | | | |
| East Orange city | X | X | X | X | X | X | X | X | X |
| Elizabeth city | X | X | | X | X | | X | X | |
| Fort Lee borough | X | X | X | X | X | X | X | X | X |
| Garfield city | X | X | X | X | X | X | | | |
| Hackensack city | X | X | X | X | X | X | X | X | X |
| Hoboken city | X | X | X | X | X | X | X | X | X |
| Irvington CDP | X | X | X | X | X | X | X | X | X |
| Irvington township | X | X | X | X | X | X | X | X | X |
| Jersey City | X | X | X | X | X | X | X | X | X |
| Lodi borough | X | X | X | | | | | | |
| New Brunswick city | X | X | | X | X | | X | X | |
| Newark city | X | X | X | X | X | X | X | X | X |
| North Bergen township | X | X | X | X | X | X | X | X | X |

[a] Place refers to area designations as determined by the U.S. Census Bureau.
[b] Total population.
[c] Total population per square mile.

**(cont.) Appendix A: Places in NJ Designated as Urban Under Alternative Population and Population Density Criteria**

| **Population cutoff** | **20,000** | | | **25,000** | | | **30,000** | | |
|---|---|---|---|---|---|---|---|---|---|
| **Population density cutoff** | **8,000** | **9,000** | **10,000** | **8,000** | **9,000** | **10,000** | **8,000** | **9,000** | **10,000** |
| **Place** | | | | | | | | | |
| Nutley CDP | X | | | X | | | | | |
| Nutley township | X | | | X | | | | | |
| Orange CDP | X | X | X | X | X | X | X | X | X |
| Passaic city | X | X | X | X | X | X | X | X | X |
| Paterson city | X | X | X | X | X | X | X | X | X |
| Perth Amboy city | X | X | | X | X | | X | X | |
| Roselle borough | X | | | | | | | | |
| Trenton city | X | X | X | X | X | X | X | X | X |
| Union City city | X | X | X | X | X | X | X | X | X |
| West New York town | X | X | X | X | X | X | X | X | X |

# Appendix B

**Appendix B: Specification and validation of the regression decomposition model**

The likelihood of being uninsured is modeled as a function of the individual characteristics described in the methods section above. Specifically, the following linear probability model is estimated for adults and children in urban and non-urban areas:

$$Y_i = \alpha + \beta X_i + \varepsilon_i$$

Y is an indicator variable that equals 1 if the individual is uninsured and 0 if insured. The variable X is a vector of individual characteristics, beta is the corresponding vector of slope coefficients, alpha is the model intercept, and epsilon is the random error term. (Survey weights are incorporated into the model using survey regression in Stata 8.0.)

The linear probability model is estimated separately for urban and non-urban areas. After estimating the two models, all dependent and independent variables are set equal to their sample means. Since regression equations are satisfied exactly (i.e., the error is zero) when variables take on their mean values (Johnston, 1984), the following equations are derived.

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

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

Mean values and parameter estimates are marked with U for urban areas and N for non-urban areas.

The key equation for the analysis is derived by subtracting the second equation from the first and performing some algebra.

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

This equation decomposes the urban coverage disparity into three parts represented by the three terms on the right hand side of the equation. The first term represents the unexplained part of the disparity. The second term, referred to as “slope effects”, represents the part of the disparity that is attributable to differences in the way

individual characteristics affect the likelihood of being uninsured in urban verses non-urban areas. The third term, referred to as "mean effects", represents the part of the disparity that is attributable to differences in the presence of individual characteristics in urban versus non-urban areas.

The nature of the data used for this analysis raises some econometric issues having to do with the 0-1 dependent variable. First, predicted probabilities from the model will not necessarily lie between zero and one. Second, variation in the error term may depend on other variables in the model raising the problem of heteroskedasticity. Nevertheless, the linear probability model still produces unbiased estimates of the parameters, which is the central purpose for estimating the model.

To determine whether the results are sensitive to these issues, the full regression models for children and adults are re-estimated using survey logistic regression in Stata 8.0, which is designed for the analysis of dichotomous dependent variables (though not useful for decomposition).

Results of the two procedures for children are compared in Table B-1. Although the two models are not directly comparable, they generally provide the same qualitative results in terms of the sign and statistical significance of estimated parameters.

**Table B-1: Comparison of OLS and Weighted Logistic Regression Models for Children**

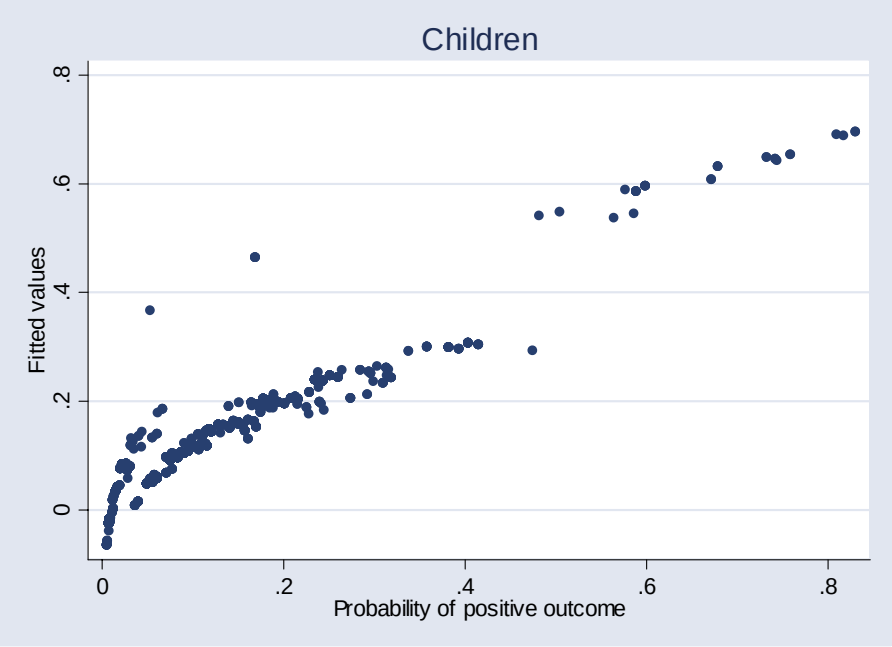
| Variable | OLS | Weighted logistic |
|---|---|---|
| Income: 0-100% FPL | 0.12* | 2.23** |
| Income: 101-200% FPL | 0.12** | 2.28** |
| Income: 201-350% FPL | 0.07** | 1.85** |
| Black non-Hispanic | -0.04 | -0.31 |
| Hispanic | 0.10** | 0.94** |
| Other non-white | 0.10 | 1.27* |
| Citizen born outside of U.S. | -0.07 | -0.68 |
| Non-citizen in U.S. for less than 5 years | 0.39** | 1.93** |
| Non-citizen in U.S. for 5 or more years | 0.00 | -0.24 |
| Male | 0.01 | 0.09 |
| Age13-18 | 0.06** | 0.70** |

| Variable | OLS | Weighted logistic |
|---|---|---|
| Not living with both parents | 0.04 | 0.44 |
| Constant | -0.03* | -4.80** |

* Coefficient is different from 0 at the 5% level of significance.
** Coefficient is different from 0 at the 1% level of significance.

Some additional perspective is provided in Chart B-1. Predicted probabilities from the OLS model for children are measured on the vertical axis. Predicted probabilities from the weighted logistic model are measured on the horizontal axis. Aside from two outliers, the data show strong correlation between the two sets of predicted probabilities. The simple correlation coefficient between these two variables is 0.95 with a p-value less than 0.001. Altogether the two models appear to provide similar results with regard to the individual factors that influence the probability of lacking insurance for children in the sample.

**Chart B-1: Predicted probabilities of lacking insurance in OLS and Logistic Regression Models for children**



A similar analysis is done for adults. Table B-2 compared regression coefficients for the OLS and weighted logistic regressions. The two models provide the same qualitative results in terms of the sign and statistical significance of estimated parameters.

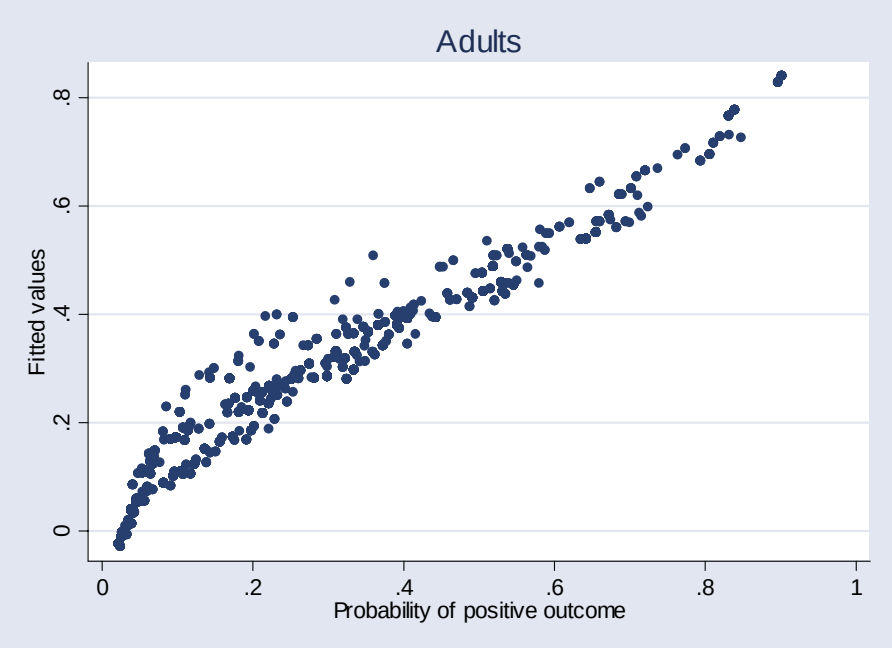
**Table B-2: Comparison of OLS and Weighted Logistic Regression Models for Adults**

| Variable | OLS | Weighted logistic |
|---|---|---|
| Income: 0-100% FPL | 0.25* | 2.14* |
| Income: 101-200% FPL | 0.27* | 2.22* |
| Income: 201-350% FPL | 0.11* | 1.35* |
| Black non-Hispanic | 0.00 | 0.11 |
| Hispanic | 0.11* | 0.65* |
| Other non-white | 0.00 | 0.13 |
| Citizen born outside of U.S. | 0.02 | 0.15* |
| Non-citizen in U.S. for less than 5 years | 0.29* | 1.57* |
| Non-citizen in U.S. for 5 or more years | 0.14* | 0.77* |
| Male | 0.06* | 0.55* |
| Age 26-45 | -0.11* | -0.68* |
| Age 46-64 | -0.13* | -0.97* |
| Constant | 0.11* | -2.79* |

* Coefficient is different from 0 at the 1% level of significance. All other coefficients are statistically insignificant at the 5% level.

Chart B-2 compares predicted probabilities from the OLS model (vertical axis) to predicted probabilities from the weighted logistic model (horizontal axis). The data show strong correlation between the two sets of predicted probabilities. The simple correlation coefficient between these two variables is 0.97 with a p-value less than 0.001. Altogether the two models appear to provide similar results with regard to the individual factors that influence the probability of lacking insurance for adults in the sample.

**Chart B-2: Predicted probabilities of lacking insurance in OLS and Logistic Regression Models for Adults**



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## Notes

[1] In preliminary analysis, other variables were also considered including employment status, distance to the nearest Federally Qualified Health Center, and distance to the nearest hospital. None of these variables had a significant effect on the urban coverage disparity and so are not included in the final analysis.

[2] Other characteristics of parents were also considered including parents' education and citizenship status. Unfortunately, these variables could not be incorporated into the model for two reasons. First, many children live with either one or neither parent making it impossible to fully account for parental characteristics. Second, citizenship variables often overlap between parents and children creating problems of multicollinearity. Third, education is not uniformly reported among parents that do live with their children.


**State of New Jersey**
**Department of Human Services**

***In Collaboration with***
**Rutgers Center for State Health Policy**

Project funded by the U.S. Department of Health & Human Services,
Health Resources and Services Administration,State Planning Grant # 6 P09 OA 00040-02-01