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## Social Determinants of Health among the Rural African American Population

*This policy brief is the first in a series of four policy briefs prepared by the Rural and Minority Health Research Center on the topic of social determinants of health.*

- Approximately 3.6 million rural residents, 6.0% of the rural population, identify as African American.
- Rural African American residents experience multiple economic disparities. They have lower educational attainment than rural white residents coupled with higher levels of poverty and lower levels of internet access.
- Rural African American populations disproportionately live in economically challenged communities. Rural African American residents are more likely to live in persistent poverty rural counties (41.3%) and in persistent child poverty counties (63.9%) than are white rural residents (8.9% and 20.9%, respectively).
- Rural African American age-adjusted mortality rates are higher than those of both rural white residents and urban African American residents.

### Introduction

Approximately 3.6 million non-metro<sup>i</sup> residents identify as African American — the third largest racial group in the United States (U.S.). These individuals make up 6.0% of the non-metro U.S. population. Reflecting the nation's history, states in the South<sup>ii</sup> have the greatest density of African American rural residents where they represent 11.5% of the total rural population. Of all African American individuals living in non-metro counties, the majority (90.4%) live in non-metro counties in the South.

Two patterns were visible across the age distribution of rural and urban African American and non-Hispanic white (hereafter, white) populations: African American populations were younger than their white peers, and rural populations were older than their urban equivalents (See Table A-1). The African American rural population was slightly younger than the white rural population. Thus, 57.9% of rural African American individuals were age 44 or younger versus 49.0% of white rural residents. Conversely, only 14.5% of rural African American residents were age 65 or above versus 20.1% of white rural residents. The tendency for minority populations to contain proportionately more children has been noted more generally within the U.S.<sup>1</sup> Within each racial group, urban

<sup>i</sup> In this brief, rurality is defined at the county level, with non-metropolitan counties considered as rural and metropolitan counties, urban. The terms “rural” and “non-metro” are used interchangeably. Data are drawn from the 2016 U.S. Census and pertain to non-Hispanic African American residents.

<sup>ii</sup> Defined as the Census Region.

populations contained a higher proportion of children and a lower proportion of individuals aged 65 or older than did rural populations. Specifically, 22.3% of the rural African American population and 20.5% of the rural white population were children (age less than 18) versus 25.5% and 18.5%, respectively, of their urban counterparts. At the other end of the age spectrum, 14.5% of rural African American residents and 20.1% of white rural residents were age 65 or older versus 10.6% and 19.0% of the respective urban population.

### **Social determinants of health within the rural African American population**

Social determinants of health, as defined by the World Health Organization, are “the conditions in which people are born, grow, live, work and age,” a definition paralleled by the Centers for Disease Control and Prevention.<sup>2,3</sup> Social determinants include both individual factors such as income, education, and access to health care, as well as, community conditions such as housing, safety, and the availability of employment. A general discussion of the social determinants of health for rural residents is available at the Rural Health Information Hub (<https://www.ruralhealthinfo.org/>).

Social determinants of health contribute strongly to health disparities in African American rural populations in the U.S.<sup>4,5,6</sup> Pervasive poverty and low educational attainment have resulted in a large proportion of the rural African American population living in suboptimal social and environmental conditions which affect their health, social, and economic wellbeing.<sup>5,7,8</sup> The sections that follow compare the distribution of social determinants among African American and white rural residents using information from the 2016 U.S. Census.

#### *Educational attainment*

African American rural residents lag behind white residents in educational attainment. About 20.7% of rural African American adults, versus 10.4% of white adults, have less than a high school diploma (Table A-1). In part, lower educational attainment among rural African Americans reflects educational patterns among African American students nationally as these students have lower graduation rates than their white peers.<sup>9</sup> However, rural African American adults also lag behind their urban peers among whom only 14.2% lack a high school diploma.

#### *Poverty status*

Poverty is closely associated with adverse health outcomes and health risk behaviors including a sedentary lifestyle, unhealthy diet, and smoking.<sup>8</sup> Historically, poverty has disproportionately affected African American households especially in rural areas.<sup>9</sup> While the absolute number of rural persons living at or below the federal poverty level was higher among white than among African American rural residents (5.7 million versus 0.8 million persons in 2016), the proportionate impact of poverty was greater within the African American community. Within rural counties, 24.1% of African American residents, versus 10.4% of white residents, lived at or below the federal poverty level in 2016 (Table A-1). Similar proportions of rural and urban African Americans lived below the poverty line.

#### *Disability*

Disability rates vary socioeconomically and geographically. Disability levels were higher among African American than among white rural residents. An estimated 18.1% of rural African American residents of all ages were disabled versus 15.6% of rural white residents and 13.8% among urban African American individuals (Table A-1). Environmental factors including limited access to housing, healthcare, transportation, education, and employment are among the issues that contribute to racial and rural disparities in disability.<sup>10</sup>

### *Veteran status*

In general, rural residents were more likely to be veterans of the U.S. Armed Forces than were urban residents (9.4% versus 7.0%; Table A-1). Paralleling this overall difference, rural African American residents were more likely to have been veterans than their urban peers (8.1% versus 6.9%). However, a slightly smaller proportion of African American rural residents are veterans compared to rural white residents (8.1% versus 9.9%; 2016). Rural veterans may experience barriers to health services including mental health services due to travel distances and lack of awareness of their availability.<sup>11</sup>

### *Nativity*

Across all groups, rural residents were markedly less likely to have been born outside the U.S. than were urban residents (3.5% versus 15.9%; Table A-1). Among white rural residents, 1.2% were born outside the U.S.; this value is 2.0% among rural African American residents. Urban residents in general were more likely to have been born outside the U.S.; 10.4% of urban African American individuals and 5.0% of their urban white peers were foreign-born.

### *Computer and broadband*

Despite widespread use of digital technologies and the Internet nationally, rural access to broadband is still limited. The digital divide is accentuated among rural African American households. Among white households, 5.5% of urban and 9.0% of rural residents lived in homes without a computer in 2016 (Table A-1). Among African American households, 10.1% of urban and 17.6% of rural residents did not have a computer defined as a computer, tablet, or smartphone. Similarly, while 89.1% of urban and 82.5% of rural white residents reported a household broadband Internet subscription comparable values were 78.0% for urban and 66.8% for rural African American households.

## **Concentration in high-risk counties**

Economic indicators, such as poverty or residence in a high-poverty county, contribute to social and economic well-being. County of residence is associated with several health-risk behaviors and health outcomes including life expectancy.<sup>12,13</sup> Recent reports show that the gap in life expectancy has been widening between low- and high-risk counties.<sup>14</sup> This section examines disparities of place: differing concentrations of white and non-white populations across rural counties.

Non-white rural populations disproportionately live in high-need areas compared to the rest of the rural population. In 2016, three quarters (75.1%) of all rural African American residents lived in counties falling in the highest quartile for poverty, that is, where 19.7% or more of all households are poor. (Table A-2) Relatedly, 56.7% of all rural African American residents lived in counties in the highest unemployment quartile, and 62.1% of all rural African American residents lived in counties in the lowest quartile for median household income.

At the county level, poverty can be an enduring phenomenon. The U.S. Department of Agriculture characterizes counties as having “persistent poverty” if 20 percent or more of the population have lived in poverty for the past 30 years. Of the 1,976 non-metropolitan counties, 301 are characterized as persistent poverty counties. Two of every five African American rural residents (41.3%) lived in persistent poverty rural counties in 2016 compared with 8.9% of white residents. Similarly, the USDA has designated 558 counties as “persistent child poverty” counties. These are counties in which 20% or more of children have lived below the poverty line in each Census since 1980. African American rural residents were highly concentrated in these child poverty counties with

63.9% of rural African American citizens living in these areas versus 20.9% of white citizens (data not in table).

### Minority residents and health care resources

Nearly all rural residents are challenged by reduced availability of health care providers and facilities.<sup>15</sup> Non-metro America’s sparse population and relatively low financial resources have not been conducive to attracting or retaining health care personnel. In consequence, many non-metro counties have been designated Health Professional Shortage Areas (HPSAs).<sup>iii</sup> Across each of the three health disciplines measured, African American rural residents were more likely than their white peers to live in a county that is a whole county health professional shortage area (Table 1).

Facility availability shows smaller race-based differences. Rural African American residents were slightly more likely to reside in a county that lacks a hospital or a home health agency than were white residents (Table 1). On the other hand, rural African

American individuals were less likely to live in a county that lacks a Rural Health Clinic or a Federally Qualified Health Center. While the availability of the latter two safety net providers to African American rural populations is encouraging, it is uncertain whether these facilities alone are sufficient to compensate for overall provider shortages in counties where African American persons live.

One factor leading to health care provider shortages is the absence of a substantial paying patient base to support institutions and individuals. Compared to white residents, rural African Americans were disproportionately concentrated in rural counties that were above the median for the proportion of their population that lacks health insurance (12.2%). Thus, 75.3% of all rural African American residents lived in counties with an uninsured rate of 12.2% or more in

2015 versus 41.3% of rural white residents (Table 2). Rural African American individuals disproportionately reside in the South. Arkansas, Kentucky, Louisiana and West Virginia are the only

Table 1: Health care resource availability, by race

| Percent of population living in counties with indicated designation or facility status   | White | African American |
|--|-------|------------------|
| <b>Health Care Personnel Shortages</b>   |       |                  |
| Primary Care HPSA*   | 17.5% | 30.7%            |
| Dental HPSA*   | 11.7% | 31.6%            |
| Mental Health HPSA*  | 74.1% | 80.4%            |
| <b>Health Care Facility Gaps</b>   |       |                  |
| No hospital  | 8.8%  | 11.7%            |
| No skilled nursing facility  | 3.6%  | 3.5%             |
| No home health agency  | 25.5% | 28.8%            |
| No Rural Health Clinic   | 40.2% | 35.5%            |
| No Federally Qualified Health Center   | 40.4% | 26.2%            |
| <i>Source: Area Health Resource File, 2015. Population data in this file are drawn from the American Community Survey 2009 – 2013.</i> |       |                  |
| <i>* Whole County Health Professions Shortage Area</i>   |       |                  |

Table 2: Rural population distribution by county-level quartiles of health insurance coverage, by race

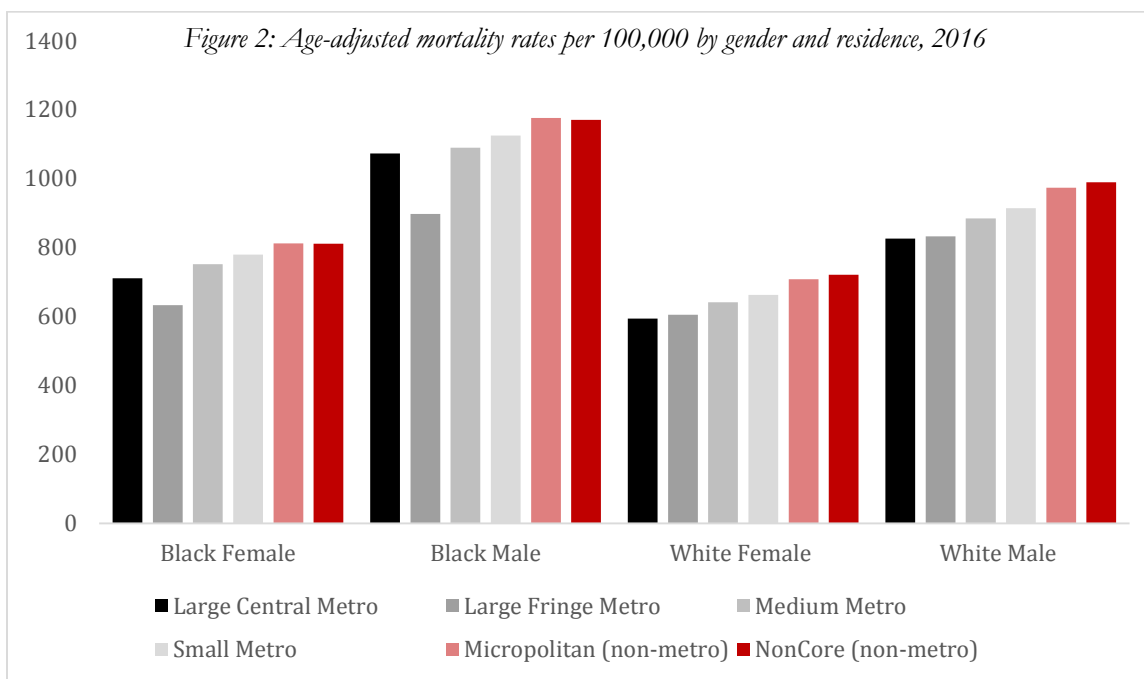
| Proportion of county residents lacking health insurance (age ≤ 64) | NH-White | African American |
|--|----------|------------------|
| < 8.6% (lowest quartile)   | 33.8%    | 9.0%             |
| ≥ 8.6% - < 12.2%   | 24.8%    | 15.7%            |
| ≥ 12.2% - < 16.0%  | 22.5%    | 45.3%            |
| ≥ 16.0% (highest quartile)   | 18.8%    | 30.0%            |
| <i>Source: Area Health Resource File, data for 2015.</i>           |          |                  |

<sup>iii</sup> For a full definition of shortage areas, see <https://bhwh.hrsa.gov/shortage-designation/hpsas>

four southern states that expanded Medicaid under the Affordable Care Act.<sup>5</sup> About 40% of Medicaid-eligible African American rural residents lived in states that rejected Medicaid expansion.<sup>5</sup>

### Mortality among Rural African American Residents

Research has consistently documented higher mortality among African American than white individuals.<sup>16</sup> For the present report, data from the Centers for Disease Control and Prevention (CDC Wonder) were used to calculate age-adjusted death rates among African American and white populations by residence and gender for the year 2016 (see Figure 2 and Table A-3).<sup>17</sup>



Mortality rates within each gender show both race-based and residence-based disparities. Age-adjusted mortality rates per 100,000 residents were highest among African American men living in micropolitan rural counties (1,177) followed by noncore rural counties (1,171). Death rates for rural African American males exceeded those of their white counterparts as well as those of African American men in urban counties. African American women living in micropolitan and noncore rural counties had similar death rates (813 and 812, respectively); both rates were higher than among similar women in urban counties. Race-based disparities can also be observed with all African American death rates exceeding those of their white peers. The dual disparity experienced by rural African Americans has been found in earlier work.<sup>18</sup>

### Risk factors in rural counties with a high proportion of African American residents

Rural residents generally are more likely to report their health as poor and more likely to engage in high-risk health behaviors.<sup>16</sup> Due to data restrictions, we were not able to use person-level information to assess health-related quality of life or health behaviors among rural African American residents directly. As an approximation, we used county rankings data from the Robert Wood Johnson Foundation (<http://www.countyhealthrankings.org/>) to look at outcomes in rural counties that have a proportionately high representation of African Americans and compared them to other rural counties. A proportionately high representation of African Americans was defined as more than 20% of the population in a county reporting race as African American; n=279; hereafter, high

concentration African American counties. The underlying assumption is that in the “high concentration African American” counties African American residents would contribute more to total overall health than in other counties. Details are provided in Table A4.

A higher proportion of adults reported fair or poor health in high concentration African American rural counties than in counties with proportionately fewer African American residents (23.8% vs 16.4%). Average physically unhealthy days (4.6) and poor mentally unhealthy days (4.4) were also higher in high concentration African American population counties compared to other rural counties (3.9 days for both).

Examining health behaviors, a higher proportion of adults in high concentration African American rural counties reported smoking (21.3%) compared to other rural counties (17.9%). Similarly, obesity and lack of physical activity outside of work were more common in high concentration African American counties than other rural counties. The greatest gap involved the proportion of adults reporting access to exercise opportunities which was markedly lower in high concentration African American counties (44.1%) than in other rural counties (60.6%).

Potentially contributing to the obesity problem, counties with a high proportion of African American residents contained a poorer environment for healthy eating as measured by the Food Environment Index (FEI) developed by the County Health Rankings authors. The FEI combines the two concepts of access to food as measured by income and geographic proximity to a grocery store and food insecurity as measured by consistent access to food. It is measured on a scale of 0-10. The worst FEI is represented by 0 and the best FEI is represented by 10. The FEI within high concentration African American counties (6.0) was lower than that within other rural counties (7.5; data not in table).

Health outcomes within high African American rural counties are poorer than other rural counties. Diabetes rates are 30% higher, teen birth rates are 44% higher, and low birth weight rates are 53% higher in these minority concentration counties (Table A-4). The greatest disparity was found for HIV: HIV prevalence is 350% larger in high concentration African American rural counties than in all other rural counties. The difficulty of controlling this stigmatized infectious disease in low-resource counties cannot be overstated.

## Conclusions

Disparities between African American and white rural residents were found across multiple sociodemographic domains. Individually, rural African American residents were more likely to have low educational attainment, to be impoverished, to be disabled, and to lack home Internet access than their white peers. In addition, rural African Americans individuals were more likely than their white peers to live in counties where these problems are widespread suggesting lower availability of community resources that could supplement individual family resources. As a likely consequence, residents of high concentration African American counties were more likely to report fair to poor health and to experience a variety of adverse health conditions including HIV. In context, it is not surprising that mortality rates for rural African American populations exceeded those not only of white rural residents but of urban African American residents as well.

Changing the outlook for rural African American populations requires actions beyond the realm of health policy alone. State and local policy makers and philanthropic organizations should consider the promotion of cross-sectoral efforts. Focusing on improving high school graduation rates and promoting local economic development are two examples of ways to improve eventual health outcomes.

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APPENDIX

Supporting Tables

Table A-1. Characteristics of non-Hispanic white and African American populations, by metropolitan status of county of residence, 2016

|  | Rural        |                     |                        | Urban        |                     |                        |
|--|--------------|---------------------|------------------------|--------------|---------------------|------------------------|
|  | NH*<br>White | African<br>American | All Rural<br>Residents | NH*<br>White | African<br>American | All Urban<br>Residents |
| Age                                      |              |                     |                        |              |                     |                        |
| Less than 18 years                       | 20.5%        | 22.3%               | 22.1%                  | 18.5%        | 25.5%               | 22.9%                  |
| 18 – 44 years                            | 28.5%        | 35.6%               | 29.8%                  | 34.4%        | 39.5%               | 37.3%                  |
| 45 – 64 years                            | 31.0%        | 27.7%               | 29.7%                  | 28.1%        | 24.4%               | 25.2%                  |
| 65 years and older                       | 20.1%        | 14.5%               | 18.4%                  | 19.0%        | 10.6%               | 14.5%                  |
| Education (adults, 25 and older)         |              |                     |                        |              |                     |                        |
| < 9 years                                | 3.2%         | 5.6%                | 4.3%                   | 1.9%         | 4.0%                | 5.6%                   |
| < High school                            | 7.2%         | 15.1%               | 8.1%                   | 4.6%         | 10.2%               | 7.0%                   |
| High school                              | 34.9%        | 37.8%               | 34.6%                  | 24.8%        | 30.6%               | 25.4%                  |
| Some college or more                     | 54.7%        | 41.5%               | 53.1%                  | 68.6%        | 55.3%               | 62.0%                  |
| Poverty*                                 |              |                     |                        |              |                     |                        |
| Poor                                     | 10.4%        | 24.1%               | 12.3%                  | 9.9%         | 23.9%               | 14.5%                  |
| Disability status                        |              |                     |                        |              |                     |                        |
| Disabled                                 | 15.6%        | 18.1%               | 15.3%                  | 13.6%        | 13.8%               | 12.3%                  |
| Veteran status                           |              |                     |                        |              |                     |                        |
| Veteran (yes)                            | 9.9%         | 8.1%                | 9.4%                   | 8.8%         | 6.9%                | 7.0%                   |
| Nativity                                 |              |                     |                        |              |                     |                        |
| Born outside the US                      | 1.2%         | 2.0%                | 3.5%                   | 5.0%         | 10.4%               | 15.9%                  |
| Computer Broadband (household)           |              |                     |                        |              |                     |                        |
| With a broadband Internet subscription   | 82.5%        | 66.8%               | 81.0%                  | 89.1%        | 78%                 | 86.2%                  |
| With dial-up Internet subscription alone | 0.6%         | 0.5%                | 0.6%                   | 0.3%         | 0.2%                | 0.3%                   |
| Without an Internet subscription         | 7.9%         | 15.1%               | 8.8%                   | 5.1%         | 11.4%               | 7.2%                   |
| No computer†                             | 9.0%         | 17.6%               | 9.6%                   | 5.5%         | 10.1%               | 6.3%                   |

*\*Non-Hispanic. \*\*Poverty uses the Federal Poverty Level income guidelines. In 2016, the FPL was \$24,300 for a family of four. † “Computer” includes any computer, tablet or smartphone.*  
*Source: US Census Bureau, 2016*



Table A-2. Rural African American population, by county-level economic status, Area Health Resource File 2015

| Counties, by quartile based on national distribution of values<br>(n = 1976 rural counties)   | Proportion living in these counties among: |                                  |
|---|--|----------------------------------|
|   | Rural White Residents                      | Rural African American Residents |
| Population in poverty (in quartiles, low to high)   |  |                                  |
| <11.5%  | 12.1%                                      | 2.4%                             |
| ≥ 11.5 - < 15.2%  | 15.0%                                      | 5.2%                             |
| ≥ 15.2 - <19.7 %  | 26.8%                                      | 17.3%                            |
| ≥ 19.7 %  | 46.0%                                      | 75.1%                            |
| Unemployment (in quartiles, low to high)  |  |                                  |
| <4.2%   | 18.9%                                      | 3.9%                             |
| ≥ 4.2 - <5.3%   | 21.8%                                      | 10.3%                            |
| ≥ 5.3 - <6.6%   | 33.3%                                      | 29.1%                            |
| ≥ 6.6%  | 26.0%                                      | 56.7%                            |
| Median household income (in quartiles, low to high)   |  |                                  |
| < \$40,426  | 26.5%                                      | 62.1%                            |
| ≥ \$40,426 - < \$46,800   | 32.3%                                      | 25.5%                            |
| ≥ \$46,800 - < \$54,153   | 26.4%                                      | 9.1%                             |
| ≥ \$54,153  | 14.9%                                      | 3.2%                             |
| <i>Source: Area Health Resource File (AHRF), 2015.</i>  |  |                                  |
| <i>Note: AHRF data in this file are drawn from the American Community Survey 2009 – 2013 and thus do not directly parallel the data in Table A-1.</i> |  |                                  |

Table A-3. Age adjusted mortality rates per 100,000 residents, by gender and race, 2016.

| Rural/Urban Status of County, based on 2013 Urbanization Codes | Black Female | Black Male | White Female | White Male |
|--|--------------|------------|--------------|------------|
| Large Central Metropolitan                                     | 711          | 1074       | 594          | 827        |
| Large Fringe Metropolitan                                      | 633          | 898        | 606          | 833        |
| Medium Metropolitan  | 752          | 1090       | 642          | 885        |
| Small Metropolitan   | 780          | 1126       | 663          | 915        |
| Micropolitan (non-metro or rural)                              | 813          | 1177       | 709          | 974        |
| Noncore (non-metro or rural)                                   | 812          | 1171       | 722          | 990        |

Table A-4. Characteristics of adults in rural counties with more than 20% African American population versus rural counties with no concentrated minority population, selected health indicators, 2015 County Health Rankings data

|   | Rural counties with >20% African American residents (n=279) | Other rural counties (n=1,413)* |
|---|---|---------------------------------|
| Health indicators:                                  |   |                                 |
| Self-reported poor or fair health (%)               | 23.8%   | 16.4%                           |
| Unhealthy days in the last 30 days                  |   |                                 |
| Physical health days                                | 4.6   | 3.9                             |
| Mental health days                                  | 4.4   | 3.9                             |
| Health-related behaviors:                           |   |                                 |
| Adult smoking (%)                                   | 21.3%   | 17.9%                           |
| Adult obesity (%)                                   | 35.8%   | 31.7%                           |
| Physical inactivity (%)                             | 31.7%   | 27.4%                           |
| Access to exercise opportunities (%)                | 44.1%   | 60.6%                           |
| Health outcomes:                                    |   |                                 |
| Average Teen birth rate (per 1,000)                 | 47.3  | 32.8                            |
| Average Low birth weight rate (%)                   | 11.5%   | 7.5%                            |
| Average HIV prevalence rate (per 100,000 residents) | 358.9   | 102.7                           |
| Average Diabetes prevalence (%)                     | 14.7%   | 11.3%                           |

Source: Robert Wood Johnson Foundation County Health Rankings, 2015.

\* "Other" counties are those in which no single minority population, defined as African American, Hispanic, American Indian/Alaska Native, and Asian and Pacific Islander populations, makes up more than 20% of the population.

Health indicator data are drawn from the 2006 – 2012 Behavioral Risk Factor Surveillance System.

Health-related behaviors are drawn from the 2006 – 2012 Behavioral Risk Factor Surveillance system (smoking); the 2011 CDC Diabetes Interactive Atlas (obesity and physical inactivity); and the 2010 and 2013 Business Analyst and map data (opportunities to exercise).

Health outcomes data are drawn from 2006 – 2012 National Center for Health Statistics natality files (teen birth rate and low birth rate); 2010 National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (HIV prevalence); and the 2011 CDC Diabetes Interactive Atlas (diabetes prevalence)

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