

# 2016 *County Health Rankings* **Key Findings Report**





# INTRODUCTION

The *County Health Rankings & Roadmaps* program helps communities identify and implement solutions that make it easier for people to be healthy in their neighborhoods, schools, and workplaces. Ranking the health of nearly every county in the nation, the *County Health Rankings* illustrate what we know when it comes to what is keeping people healthy or making people sick. The *Roadmaps* show what we can do to create healthier places to live, learn, work, and play. The Robert Wood Johnson Foundation collaborates with the University of Wisconsin Population Health Institute to bring this program to communities across the nation.

Now in its seventh year, the *County Health Rankings* continue to bring revealing data to US counties. This report offers key findings from this year's *Rankings* release and includes answers to the following questions:

- A. How Does Health Vary Across Rural and Urban Counties? (page 2)
- B. How Do Health Gaps Among Counties Differ by State? (page 4)
- C. What Are the New Measures of Each County's Health? (page 6)

Supporting materials (such as detailed data tables) are available at [www.countyhealthrankings.org/reports](http://www.countyhealthrankings.org/reports).

## Summary of Key Findings

- o Rural counties have had the highest rates of premature death for many years, lagging far behind other counties. While urban counties continue to show improvement, premature death rates are worsening in rural counties.
- o Looking solely at state averages for the factors that influence health masks the significant gaps in health that exist between counties within each state.
- Three new measures are highlighted:
  - **Residential segregation** of blacks and whites is a fundamental cause of health disparities in the US. Black/white residential segregation is highest in the Northeast and Great Lakes region and lowest along the Southeastern seaboard.
  - The rate of **deaths due to drug overdoses** has increased 79 percent since 2002. Drug overdose deaths are highest in Northern Appalachia and in parts of the West/Southwest, and lowest in the Northeast. Compared with other types of counties, rural counties have higher rates of drug overdose deaths.
  - Sleep is an important part of a healthy lifestyle. **Insufficient sleep** can have serious negative effects on health. On average, about one third of adults report getting insufficient sleep (less than 7 hours a night on average). In some counties, almost one in two residents report insufficient sleep.

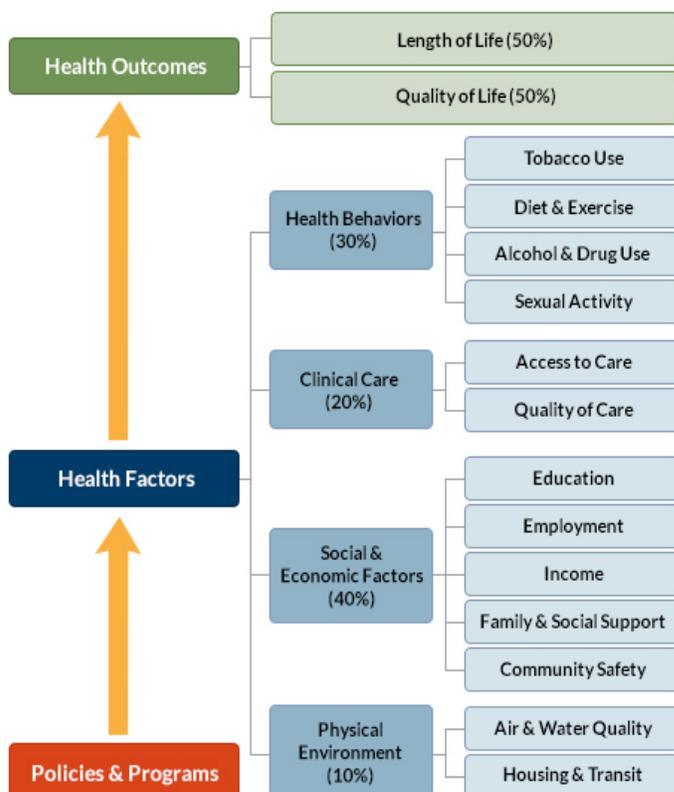
# ABOUT THE COUNTY HEALTH RANKINGS

We compile the *Rankings* using county-level measures from a variety of national data sources, which can be found on page 8. These measures are standardized and combined using scientifically-informed weights. We then rank counties within each state, providing two overall ranks that address two key questions:

1. **Health outcomes:** how healthy are residents in a county now?
2. **Health factors:** how healthy will residents be in the future?

The *Rankings* are based on a model of population health (see right) that emphasizes the many factors that, if improved, can help make communities healthier. We report these ranks at [countyhealthrankings.org](http://countyhealthrankings.org), along with all the underlying measures and additional data for this year and prior years. We also provide tools to help communities use their data to take action toward improving their health.

## County Health Rankings Model



### DO THE 2016 COUNTY HEALTH RANKINGS INCLUDE DATA COLLECTED IN 2016?

We use the most recent data available for each measure. The year(s) represented varies from measure to measure, depending on the data available at the time of release. For example, when we released the 2010 *Rankings*, the most recent data available for premature death was for 2004-2006. For the 2016 *Rankings*, the most recent data available for this same measure was for 2011-2013. The data sources and years for each measure are listed on pages 8-9.

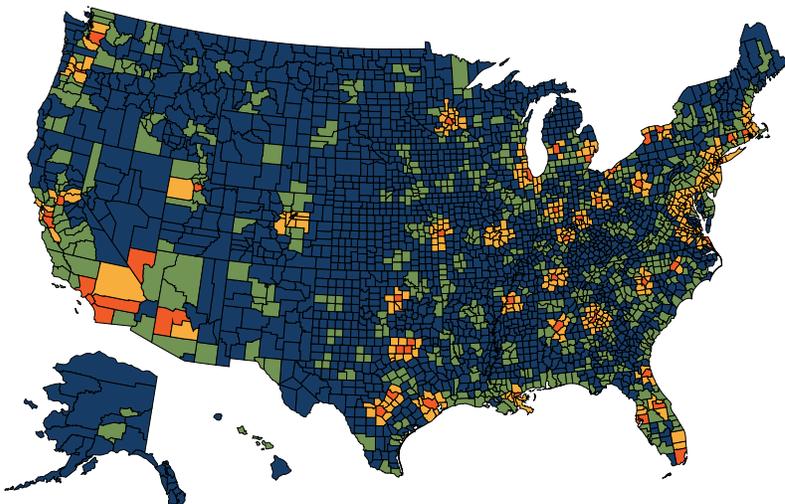
# HOW DOES HEALTH VARY ACROSS RURAL AND URBAN COUNTIES?

Ranking counties within states often leads to questions about how health outcomes and health factors vary across states. For a closer look at health by county type and size, we separated counties into the following categories:

| Category             | Definition  | Total Population | Number of Counties |
|----------------------|---|------------------|--------------------|
| Large Urban Metro    | Central urban core counties within an MSA with more than 1 million people | 96 m             | 68                 |
| Large Suburban Metro | Non-central fringe counties within an MSA with more than 1 million people | 77 m             | 368                |
| Smaller Metro        | Counties within an MSA with between 50,000 and 1 million people           | 94 m             | 731                |
| Rural                | Non-metropolitan rural counties with less than 50,000 people              | 46 m             | 1,974              |

Adapted from the National Center for Health Statistics' urban-rural classification based on Metropolitan Statistical Area (MSA) designations.

## Counties Categorized By Level of Urbanization

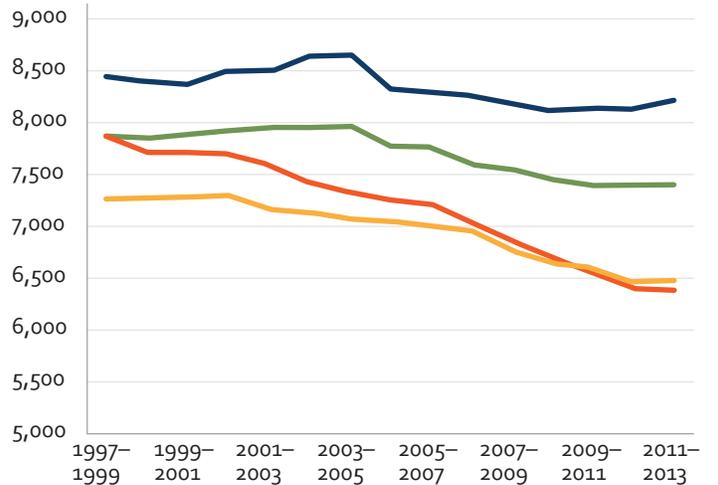


Legend: Large Urban (red), Large Suburban (orange), Smaller Metro (green), Rural (blue)

Although we use the terms Large Urban, Large Suburban, Smaller Metro, and Rural to classify entire counties, there may be urban, suburban, or rural areas within any county. Large Urban counties can include suburbs as well as city centers. Large Suburban counties may also include rural areas. These characteristics should be taken into consideration when looking more closely at individual counties.

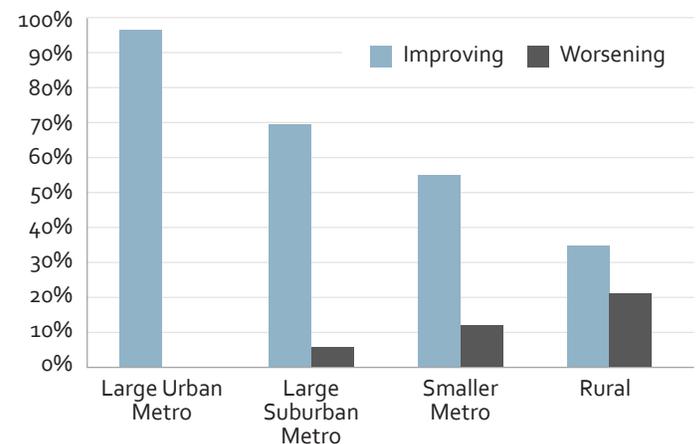
## Premature Death Trends by Level of Urbanization

Years of potential life lost under age 75 per 100,000 people



## Counties with Improving or Worsening Premature Death Rates, 1999-2013<sup>1</sup>

Percent of counties



## Key Findings

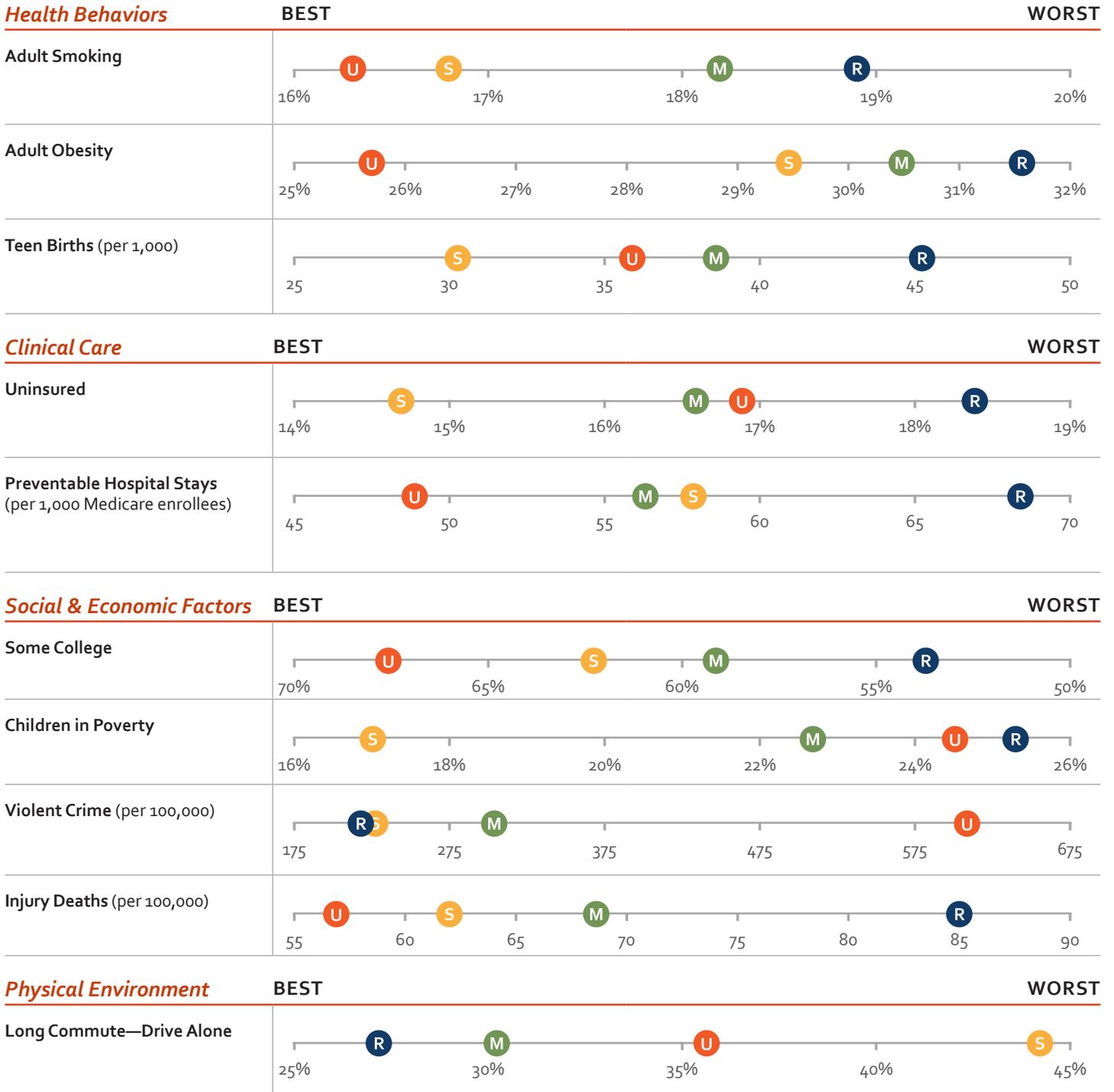
- Rural counties have consistently had the highest premature death rates and, following a few years of improvement, overall rates of premature death are increasing.
- Nearly one in five Rural counties has experienced worsening premature death rates over the past decade.
- Large Urban counties have seen the greatest declines in premature death rates since the late 1990s.
- Unlike other types of counties, nearly all Large Urban counties have consistently shown improved premature death rates.
- There is no single factor that explains the significant differences in health between Rural and other types of counties.

<sup>1</sup>There were no Major Urban counties with worsening rates. Totals do not sum to 100% because death rates stayed the same in some counties.

## Key Health Factors by Level of Urbanization

● U Large Urban  
 ● S Large Suburban  
 ● M Smaller Metro  
 ● R Rural

As the *County Health Rankings* model (see page 1) shows, there are many things that influence health outcomes including health behaviors, clinical care, social and economic factors, and the physical environment. Here we show differences across the four types of counties for selected measures within each of these groups of health factors. Looking at Adult Smoking, for example, we find that Large Urban counties have the best (lowest) rates of adult smoking while Rural counties have the worst (highest) rates. However, no single factor alone explains the significant differences in health between Rural and other types of counties.



# HOW DO HEALTH GAPS BETWEEN COUNTIES DIFFER BY STATE?

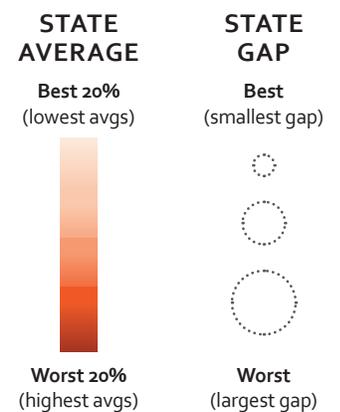
Our country has achieved significant health improvements, driven by progress in automobile safety, better workplace standards, reductions in smoking and infectious diseases, and a host of other advances. But when we take a closer look at this progress, we see that it is uneven. It is clear that not everyone in the US has a fair opportunity to be healthy.

In 2015, *County Health Rankings* released a set of 50 Health Gaps Reports showing that opportunities for health differ considerably within states. These health gaps exist across neighboring county lines, or within a community among various groups, such as by race, ethnicity, age, income, education, or sexual orientation. To build a Culture of Health for everyone, it's important to begin closing these gaps. Along with snapshots of the differences among counties within states, the reports offer strategies to help do so. To learn more about Health Gaps reports, visit [countyhealthrankings.org/reports](http://countyhealthrankings.org/reports).

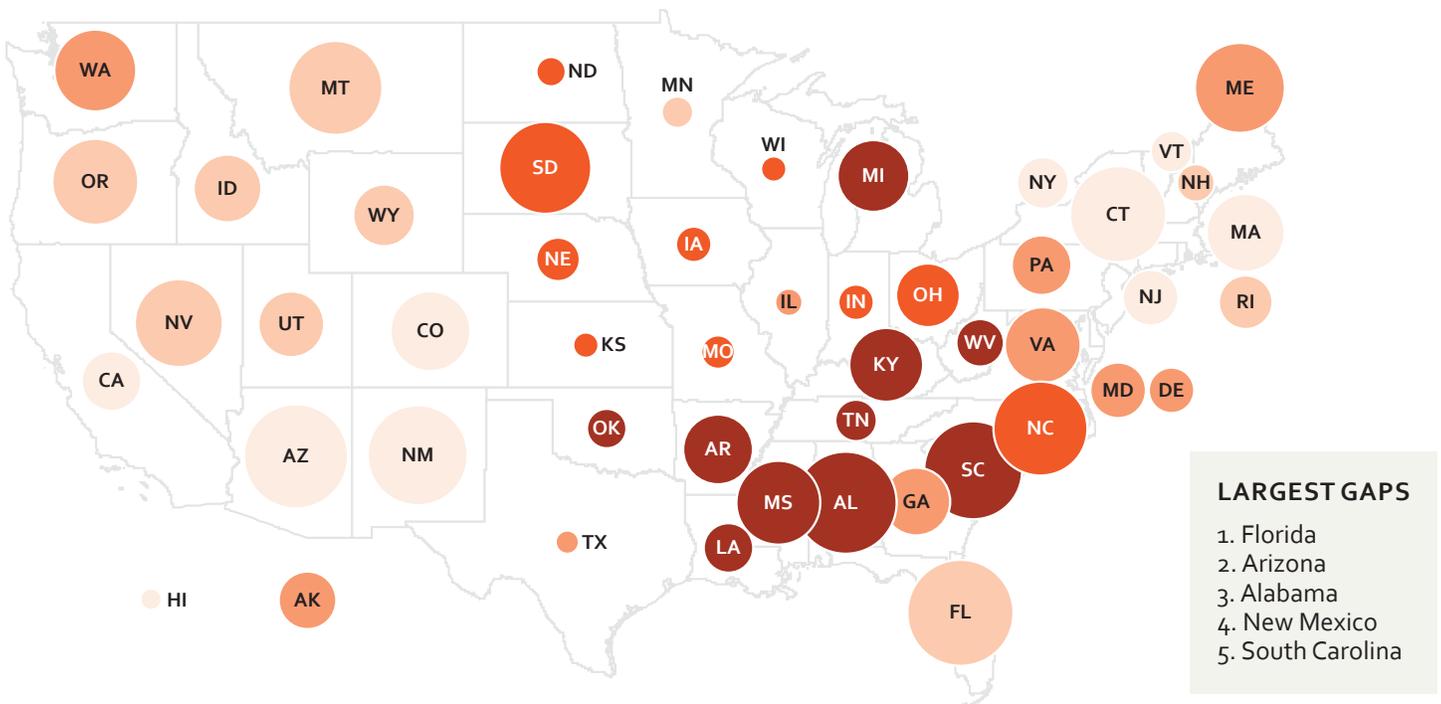
Below we build on the Health Gaps Reports by taking a closer look at the size of the health gaps within states for three selected measures: adult obesity, the uninsured, and children in poverty (gaps for other measures as well as the underlying data for all measures are available [online](#)).

- Each circle on the maps represents a state.
- The color shading of each circle shows how well each state is doing overall (state average). States with less shading are doing better overall. States with deeper shading are doing worse.
- The size of each circle shows how wide the gap is within the state (state gap). Smaller circles represent a smaller gap between the counties with the best and worst values.<sup>2</sup> Larger circles represent larger gaps.

So, small and lightly shaded circles represent the states with the best performance overall and the smallest gap between counties. For example, the adult obesity map below shows that New Jersey has one of the best rates of obesity (lightly shaded circle) and has a relatively small gap in obesity rates between its counties (smaller circle). Alabama, by contrast, has one of the worst rates of obesity (deeply shaded red circle), and a very wide gap in obesity rates between its counties (larger circle).

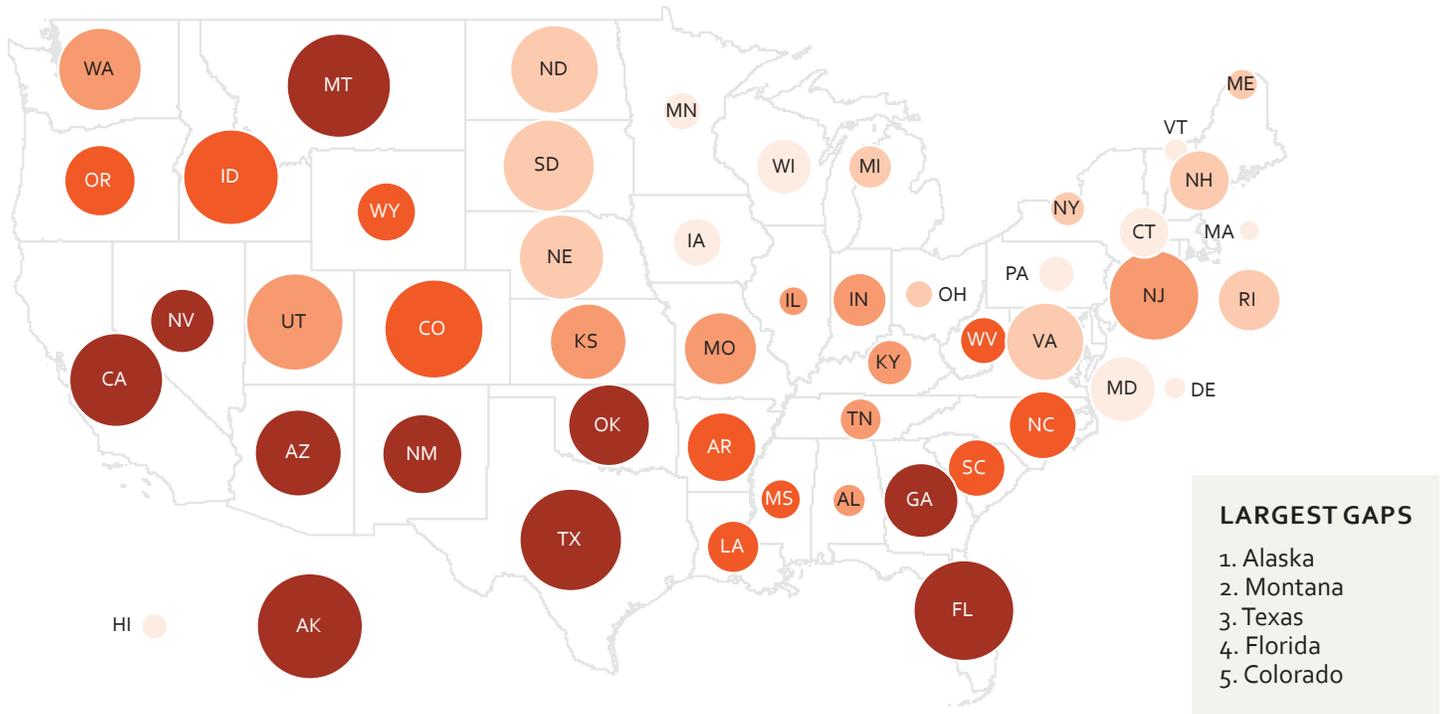


## Adult Obesity: State Average and Gap

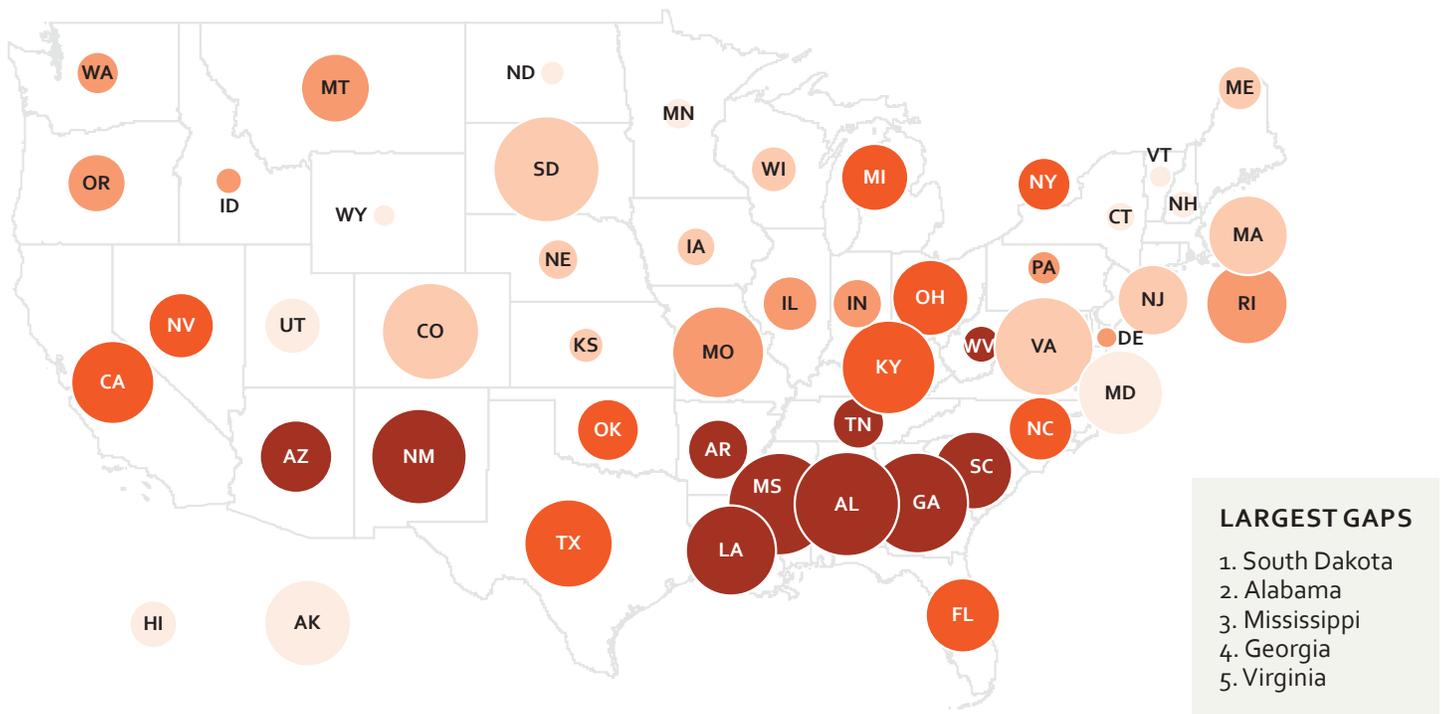


<sup>2</sup> In calculating the size of the gaps for each state, we calculated the difference between the best and worst county values for each measure. The best and worst values were represented by the top and bottom 10% of county-level values for a given measure.

## Uninsured: State Average and Gap



## Child Poverty: State Average and Gap



To learn more about how states and local communities can take action to reduce these gaps, visit [What Works for Health](https://www.countyhealthrankings.org/roadmaps/what-works-for-health) at [countyhealthrankings.org/roadmaps/what-works-for-health](https://www.countyhealthrankings.org/roadmaps/what-works-for-health), which includes a wide variety of evidence-informed policies, programs, and system changes to improve health for all.

# WHAT ARE THE NEW MEASURES OF EACH COUNTY'S HEALTH?

The *Rankings* are calculated using 35 measures (5 health outcomes and 30 health factors). There are additional measures that are not included in county ranks because some measures, like demographics, provide good contextual information but do not lend themselves to ranking. Other measures are not available for a majority of counties, but also provide helpful context for understanding a county's opportunities for improving health. We highlight three of the new additional measures for 2016 below.

## Residential Segregation

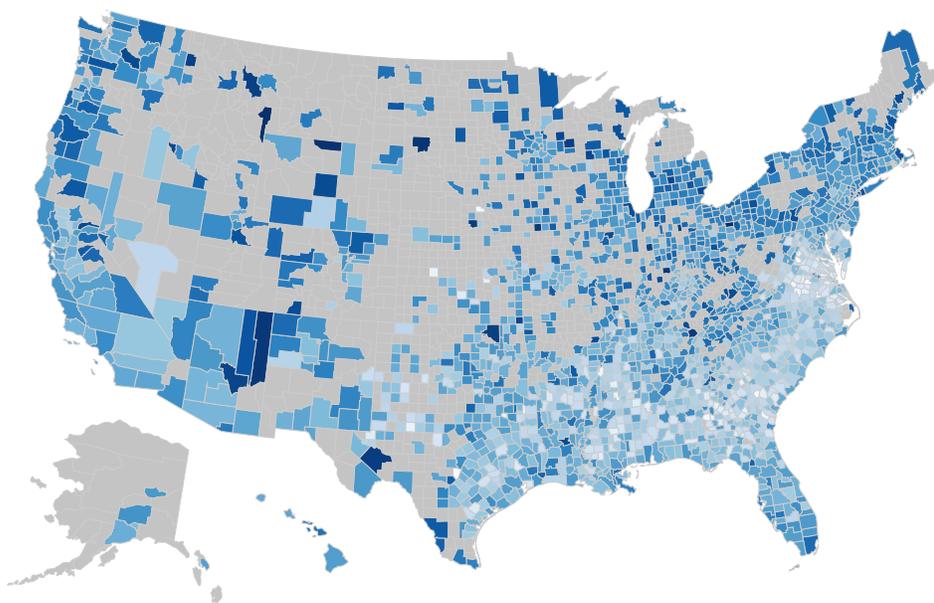
Residential segregation refers to the degree to which two or more groups live separately from one another in a geographic area. Residential segregation of blacks and whites is considered to be a fundamental cause of health disparities in the US and has been linked to poor health outcomes including greater infant and adult mortality, and a wide variety of reproductive, infectious, and chronic diseases. Although most overtly discriminatory policies and practices promoting segregation, such as separate schools or seating on public transportation or in restaurants based on race have been illegal for decades, segregation caused by structural, institutional, and interpersonal racism still exists in many parts of the country. Segregation continues to have lasting implications for both personal and community well-being.

No single strategy can lessen the potential negative health impacts of residential segregation. Rather, a range of policies, programs, and systems changes, such as affordable housing development incentives, better enforcement of fair housing

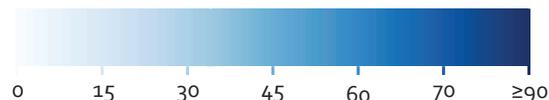
policies, and public transit system expansion to connect neighborhoods and resources are good examples of ways to address the differences in housing and environmental quality, as well as economic and educational opportunities that exist in many segregated neighborhoods.

### Key Findings

- Black/white residential segregation values are highest in the Northeast and Great Lakes region and lowest along the Southeastern seaboard.
- Among counties in the US, the average black/white residential segregation value is 46.
- The best performing counties have black/white residential segregation index values of less than 23.
- The worst performing counties have black/white residential segregation values of at least 67 or higher, meaning that at least 67 percent of either blacks or whites would have to move into other census tracts to create an evenly distributed residential population.



Residential segregation-black/white;  
0=complete integration, 100=complete segregation



The makeup of local populations varies across the US and so we provide both black/white and non-white/white residential segregation data at [countyhealthrankings.org](http://countyhealthrankings.org). For example, in Nevada or Idaho (which both have relatively smaller black populations compared to other states), it might be more helpful to look at non-white/white segregation, rather than black/white segregation. It is also important to consider that for some population groups, such as new immigrants, living among others who share their cultural beliefs and practices can help build social connections that can lessen the health risks of hardship and neighborhood disadvantage.

<sup>3</sup>To measure residential segregation, we use data that show the evenness with which two groups (i.e. blacks and whites) are distributed within census tracts across counties. The index score is the percentage of one of the two groups that would have to move to different census tracts in order to produce a distribution that matches that of the county.

### UNDERSTANDING THE MEASURE

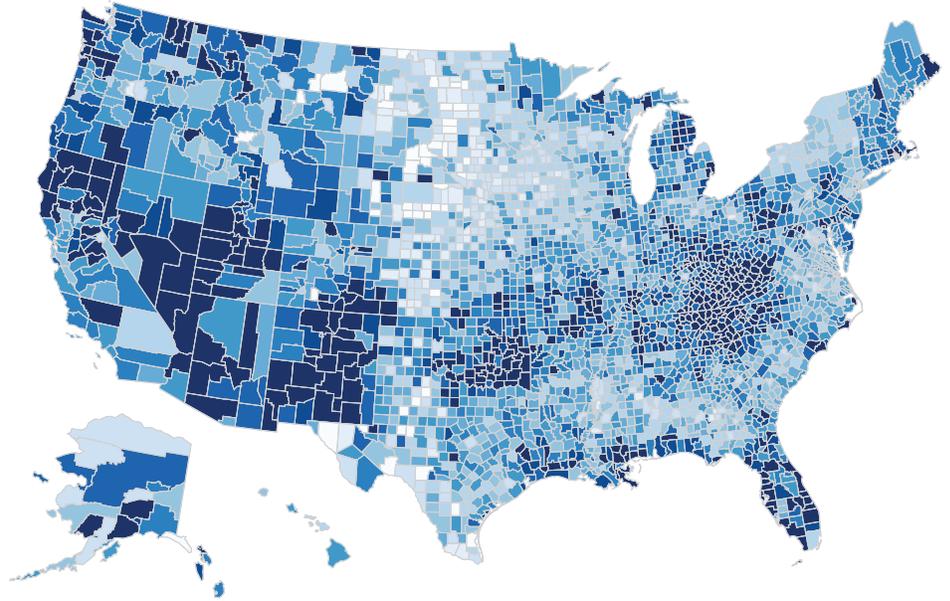
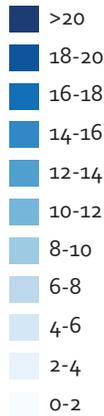
The black/white residential segregation index<sup>3</sup> can range from zero (complete integration) to 100 (complete segregation). Anything above 60 represents extremely high segregation.

The black/white residential segregation measure is only available for counties with a black population of at least 100. Thirty-five percent of US counties (shaded in gray) have a black population of less than 100 people and are therefore not provided with black/white residential segregation data.

## Drug Overdose Deaths

The US is experiencing an epidemic of drug overdose deaths. Since 2002, the rate of drug overdose deaths has increased by 79 percent nationwide, with a 200 percent increase in deaths involving opioids (opioid pain relievers and heroin) since 2000. Drug overdose deaths are the number of deaths due to drug overdose or poisoning per 100,000 population. These deaths include unintentional, intentional, and undetermined poisoning by and exposure to either prescription, over-the-counter, or illegal drugs.

Drug overdose deaths / 100,000 population



## Key Findings

- Among counties in the US, the average rate of drug overdose deaths is 13 per 100,000 people.
- Nine percent of counties have drug overdose rates of 6 per 100,000 or lower.
- Sixteen percent of counties have drug overdose death rates above 20 per 100,000 with some counties having rates as high as 85 per 100,000.
- Drug overdose deaths appear highest in Northern Appalachia and in parts of the West/Southwest, lowest in the Northeast, and higher in rural counties than in other types of counties.

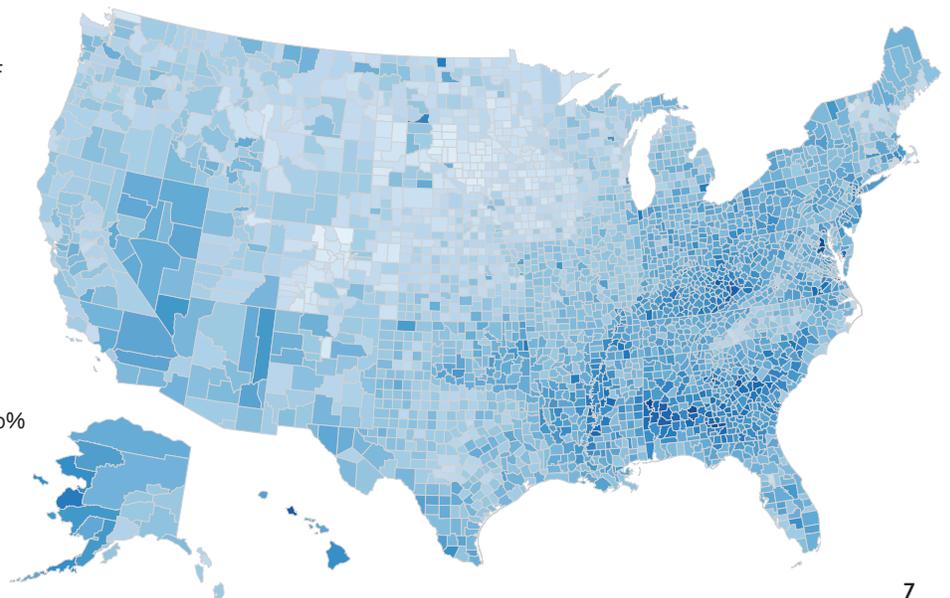
## Insufficient Sleep

Sleep is an important part of a healthy lifestyle. Sleep plays a key role in maintaining proper growth and repair of the body, learning, memory, emotional resilience, problem solving, decision making, and emotional control. A lack of sleep can have serious negative effects on health. Ongoing sleep deficiency has been linked to chronic health conditions including heart disease, kidney disease, high blood pressure, and stroke, and psychiatric disorders such as depression and anxiety, risky behavior, and even suicide. And a lack of sleep cannot only affect people's own health, but also the health of others. Sleepiness, especially while driving, can lead to motor vehicle crashes and put the lives of others in jeopardy. Our measure of insufficient sleep is the percentage of adults who report getting fewer than 7 hours of sleep per night on average.

## Key Findings

- Among counties in the US, on average, 33% of adults do not get enough sleep.
- The rate of insufficient sleep in US counties ranges from 23 percent to 47 percent.
- Rates of insufficient sleep appear highest in Southeastern US and lowest in the Plains states.
- There are no significant differences among rates of insufficient sleep by urban/rural county type.

Percent of adults reporting insufficient sleep



## 2016 County Health Rankings: Ranked Measure Sources and Years of Data

|                                    | <i>Measure</i>                                  | <i>Source</i>   | <i>Years of Data</i> |
|------------------------------------|---|---|----------------------|
| <b>HEALTH OUTCOMES</b>             |   |   |                      |
| <b>Length of Life</b>              | Premature death                                 | National Center for Health Statistics – Mortality files               | 2011-2013            |
| <b>Quality of Life</b>             | Poor or fair health                             | Behavioral Risk Factor Surveillance System                            | 2014                 |
|                                    | Poor physical health days                       | Behavioral Risk Factor Surveillance System                            | 2014                 |
|                                    | Poor mental health days                         | Behavioral Risk Factor Surveillance System                            | 2014                 |
|                                    | Low birthweight                                 | National Center for Health Statistics – Natality files                | 2007-2013            |
| <b>HEALTH FACTORS</b>              |   |   |                      |
| <b>HEALTH BEHAVIORS</b>            |   |   |                      |
| <b>Tobacco Use</b>                 | Adult smoking                                   | Behavioral Risk Factor Surveillance System                            | 2014                 |
| <b>Diet and Exercise</b>           | Adult obesity                                   | CDC Diabetes Interactive Atlas  | 2012                 |
|                                    | Food environment index                          | USDA Food Environment Atlas, Map the Meal Gap                         | 2013                 |
|                                    | Physical inactivity                             | CDC Diabetes Interactive Atlas  | 2012                 |
|                                    | Access to exercise opportunities                | Business Analyst, Delorme map data, ESRI, & US Census Tigerline Files | 2010 & 2014          |
| <b>Alcohol and Drug Use</b>        | Excessive drinking                              | Behavioral Risk Factor Surveillance System                            | 2014                 |
|                                    | Alcohol-impaired driving deaths                 | Fatality Analysis Reporting System                                    | 2010-2014            |
| <b>Sexual Activity</b>             | Sexually transmitted infections                 | National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention | 2013                 |
|                                    | Teen births                                     | National Center for Health Statistics – Natality files                | 2007-2013            |
| <b>CLINICAL CARE</b>               |   |   |                      |
| <b>Access to Care</b>              | Uninsured                                       | Small Area Health Insurance Estimates                                 | 2013                 |
|                                    | Primary care physicians                         | Area Health Resource File/American Medical Association                | 2013                 |
|                                    | Dentists  | Area Health Resource File/National Provider Identification file       | 2014                 |
|                                    | Mental health providers                         | CMS, National Provider Identification file                            | 2015                 |
| <b>Quality of Care</b>             | Preventable hospital stays                      | Dartmouth Atlas of Health Care  | 2013                 |
|                                    | Diabetic monitoring                             | Dartmouth Atlas of Health Care  | 2013                 |
|                                    | Mammography screening                           | Dartmouth Atlas of Health Care  | 2013                 |
| <b>SOCIAL AND ECONOMIC FACTORS</b> |   |   |                      |
| <b>Education</b>                   | High school graduation                          | EDFacts   | 2012-2013            |
|                                    | Some college                                    | American Community Survey   | 2010-2014            |
| <b>Employment</b>                  | Unemployment                                    | Bureau of Labor Statistics  | 2014                 |
| <b>Income</b>                      | Children in poverty                             | Small Area Income and Poverty Estimates                               | 2014                 |
|                                    | Income inequality                               | American Community Survey   | 2010-2014            |
| <b>Family and Social Support</b>   | Children in single-parent households            | American Community Survey   | 2010-2014            |
|                                    | Social associations                             | County Business Patterns  | 2013                 |
| <b>Community Safety</b>            | Violent crime                                   | Uniform Crime Reporting – FBI   | 2010-2012            |
|                                    | Injury deaths                                   | CDC WONDER mortality data   | 2009-2013            |
| <b>PHYSICAL ENVIRONMENT</b>        |   |   |                      |
| <b>Air and Water Quality</b>       | Air pollution – particulate matter <sup>1</sup> | CDC WONDER environmental data   | 2011                 |
|                                    | Drinking water violations                       | Safe Drinking Water Information System                                | FY2013-14            |
| <b>Housing and Transit</b>         | Severe housing problems                         | Comprehensive Housing Affordability Strategy (CHAS) data              | 2008-2012            |
|                                    | Driving alone to work                           | American Community Survey   | 2010-2014            |
|                                    | Long commute – driving alone                    | American Community Survey   | 2010-2014            |

<sup>1</sup>Not available for AK and HI.

## Additional Measures (Not Included in Calculation of Ranks)—Sources and Years of Data

Note: New measures for 2016 are in bold.

| <i>Measure</i>                                   | <i>Source</i>   | <i>Years of Data</i> |
|--|---|----------------------|
| <b>HEALTH OUTCOMES</b>                           |   |                      |
| Premature age-adjusted mortality                 | CDC WONDER mortality data                                   | 2011-2013            |
| Infant mortality                                 | Health Indicators Warehouse                                 | 2006-2012            |
| Child mortality                                  | CDC WONDER mortality data                                   | 2010-2013            |
| <b>Frequent physical distress</b>                | <b>Behavioral Risk Factor Surveillance System</b>           | <b>2014</b>          |
| <b>Frequent mental distress</b>                  | <b>Behavioral Risk Factor Surveillance System</b>           | <b>2014</b>          |
| Diabetes prevalence                              | CDC Diabetes Interactive Atlas                              | 2012                 |
| HIV prevalence                                   | National HIV Surveillance System                            | 2012                 |
| <b>HEALTH FACTORS</b>                            |   |                      |
| <b>Health Behaviors</b>                          |   |                      |
| Food insecurity                                  | Map the Meal Gap  | 2013                 |
| Limited access to healthy foods                  | USDA Food Environment Atlas                                 | 2010                 |
| Motor vehicle crash deaths                       | CDC WONDER mortality data                                   | 2007-2013            |
| Drug overdose deaths                             | CDC WONDER mortality data                                   | 2012-2014            |
| <b>Drug overdose deaths – modeled</b>            | <b>National Center for Health Statistics – cdc.data.gov</b> | <b>2014</b>          |
| <b>Insufficient sleep</b>                        | <b>Behavioral Risk Factor Surveillance System</b>           | <b>2014</b>          |
| <b>Clinical Care</b>                             |   |                      |
| Uninsured adults                                 | Small Area Health Insurance Estimates                       | 2013                 |
| Uninsured children                               | Small Area Health Insurance Estimates                       | 2013                 |
| Health care costs                                | Dartmouth Atlas of Health Care                              | 2013                 |
| Other primary care providers                     | CMS, National Provider Identification file                  | 2015                 |
| <b>Social and Economic Factors</b>               |   |                      |
| Median household income                          | Small Area Income and Poverty Estimates                     | 2014                 |
| Children eligible for free lunch                 | National Center for Education Statistics                    | 2012-2013            |
| Homicides  | CDC WONDER mortality data                                   | 2007-2013            |
| <b>Residential segregation – black/white</b>     | <b>American Community Survey</b>                            | <b>2010-2014</b>     |
| <b>Residential segregation – non-white/white</b> | <b>American Community Survey</b>                            | <b>2010-2014</b>     |
| <b>DEMOGRAPHICS</b>                              |   |                      |
| Population                                       | Census Population Estimates                                 | 2014                 |
| % below 18 years of age                          | Census Population Estimates                                 | 2014                 |
| % 65 and older                                   | Census Population Estimates                                 | 2014                 |
| % Non-Hispanic African American                  | Census Population Estimates                                 | 2014                 |
| % American Indian and Alaskan Native             | Census Population Estimates                                 | 2014                 |
| % Asian  | Census Population Estimates                                 | 2014                 |
| % Native Hawaiian/Other Pacific Islander         | Census Population Estimates                                 | 2014                 |
| % Hispanic                                       | Census Population Estimates                                 | 2014                 |
| % Non-Hispanic white                             | Census Population Estimates                                 | 2014                 |
| % not proficient in English                      | American Community Survey                                   | 2010-2014            |
| % Females  | Census Population Estimates                                 | 2014                 |
| % Rural  | Census Population Estimates                                 | 2010                 |

# County Health Rankings & Roadmaps

Building a Culture of Health, County by County

## University of Wisconsin Population Health Institute

610 Walnut St, #524, Madison, WI 53726

(608) 265-8240 / [info@countyhealthrankings.org](mailto:info@countyhealthrankings.org)

## Credits

**Lead authors:** Bridget Catlin, PhD, MHSA; Amanda Jovaag, MS; Marjory Givens, PhD, MSPH; and Julie Willems Van Dijk, PhD, RN

**Recommended citation:** University of Wisconsin Population Health Institute. *County Health Rankings Key Findings 2016*.

This publication would not have been possible without the following contributions:

### Research Assistance

Paige Andrews  
Keith Gennuso, PhD  
Kathryn Hatchell  
Hyojun Park, MA  
Elizabeth Pollock  
Matthew Rodock, MPH

### Outreach Assistance

Mary Bennett, MFA  
Matthew Call  
Megan Garske  
Kitty Jerome, MA  
Kate Konkle, MPH  
Jan O'Neill, MPA

### Communications and Website Development

Burness  
Forum One

### Data:

Centers for Disease Control and Prevention: National Center for Health Statistics  
Dartmouth Institute for Health Policy & Clinical Practice

### Robert Wood Johnson Foundation:

Andrea Ducas, MPH  
Michelle Larkin, JD, MS, RN  
James Marks, MD, MPH  
Joe Marx  
Dwayne Proctor, PhD  
Donald Schwarz, MD, MPH  
Amy Slonim, PhD  
Kathryn Wehr, MPH

### Scientific Advisory Group:

Patrick Remington, MD, MPH, Chair  
Renée Canady, PhD, MPA  
Maggie Super Church, MSc, MCP  
Tom Eckstein, MBA  
Elizabeth Mitchell  
C. Tracy Orleans, PhD

Maureen Bisognano, MS  
Bridget Catlin, MHSA, PhD  
Ana Diez Roux, MD, PhD  
Wayne Giles, MD, MS  
Ali Mokdad, PhD  
Steven Teutsch, MD, MPH