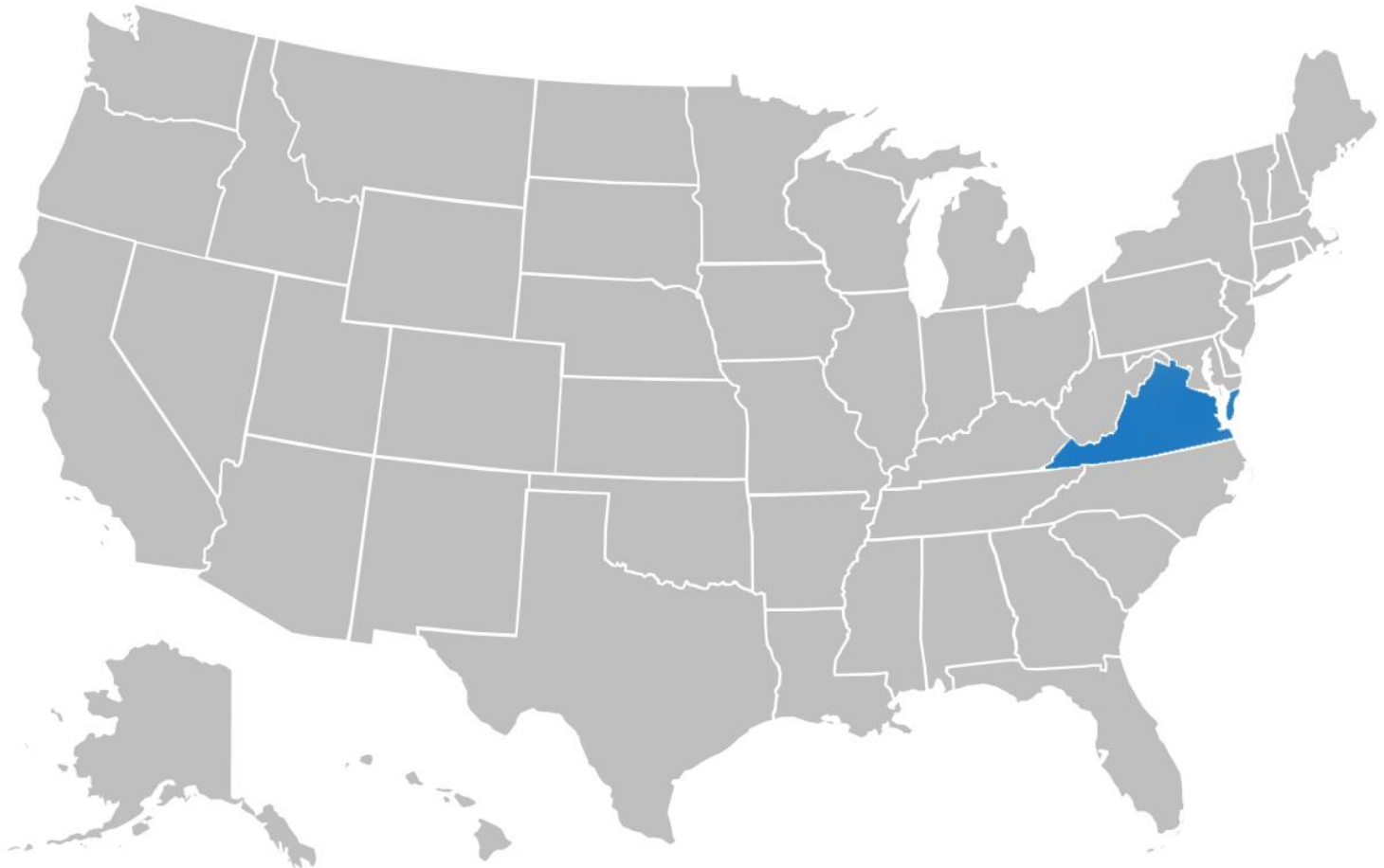


## County Health Rankings & Roadmaps

Building a Culture of Health, County by County

A Robert Wood Johnson Foundation program

# Virginia



## 2020 County Health Rankings Report

A collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.



Support provided by



Robert Wood Johnson Foundation

## 2020 County Health Rankings for the 133 Ranked Counties in Virginia

County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors
Accomack	99	111	Dinwiddie	73	103	Lee	110	131	Radford City	103	73
Albemarle	6	7	Emporia City	126	125	Lexington City	75	21	Rappahannock	40	48
Alexandria City	7	28	Essex	112	82	Loudoun	3	4	Richmond	102	50
Alleghany	71	80	Fairfax	1	2	Louisa	51	54	Richmond City	100	122
Amelia	82	92	Fairfax City	15	5	Lunenburg	124	115	Roanoke	29	11
Amherst	52	72	Falls Church City	4	1	Lynchburg City	86	81	Roanoke City	115	109
Appomattox	77	83	Fauquier	18	16	Madison	58	43	Rockbridge	38	38
Arlington	2	3	Floyd	44	46	Manassas City	27	74	Rockingham	19	42
Augusta	23	29	Fluvanna	22	13	Manassas Park City	68	64	Russell	104	114
Bath	57	41	Franklin	65	68	Martinsville City	128	123	Salem City	55	15
Bedford	35	44	Franklin City	131	124	Mathews	45	18	Scott	88	90
Bland	24	36	Frederick	21	27	Mecklenburg	117	106	Shenandoah	30	60
Botetourt	14	14	Fredericksburg City	61	86	Middlesex	70	45	Smyth	107	94
Bristol City	121	104	Galax City	130	95	Montgomery	26	31	Southampton	64	85
Brunswick	122	130	Giles	78	53	Nelson	60	59	Spotsylvania	31	56
Buchanan	123	132	Gloucester	56	30	New Kent	20	23	Stafford	8	24
Buckingham	84	118	Goochland	10	9	Newport News City	90	93	Staunton City	85	34
Buena Vista City	91	77	Grayson	74	101	Norfolk City	98	110	Suffolk City	49	63
Campbell	46	78	Greene	36	33	Northampton	96	108	Surry	95	47
Caroline	69	87	Greensville	118	121	Northumberland	66	55	Sussex	120	129
Carroll	48	70	Halifax	108	99	Norton City	109	112	Tazewell	111	116
Charles City	116	91	Hampton City	89	100	Nottoway	106	113	Virginia Beach City	17	20
Charlotte	113	119	Hanover	12	8	Orange	53	62	Warren	47	58
Charlottesville City	34	25	Harrisonburg City	54	76	Page	67	98	Washington	79	65
Chesapeake City	43	35	Henrico	32	19	Patrick	93	88	Waynesboro City	81	75
Chesterfield	25	22	Henry	97	107	Petersburg City	133	133	Westmoreland	76	89
Clarke	28	26	Highland	62	49	Pittsylvania	87	97	Williamsburg City	63	61
Colonial Heights City	105	66	Hopewell City	129	128	Poquoson City	11	12	Winchester City	50	52
Covington City	132	84	Isle of Wight	33	40	Portsmouth City	114	117	Wise	125	120
Craig	59	69	James City	16	10	Powhatan	13	17	Wythe	72	79
Culpeper	42	51	King and Queen	94	96	Prince Edward	101	102	York	5	6
Cumberland	83	105	King George	39	37	Prince George	37	71			
Danville City	127	126	King William	41	39	Prince William	9	32			
Dickenson	119	127	Lancaster	92	57	Pulaski	80	67			

For more information on how these ranks are calculated, view the tables at the end of this report and visit

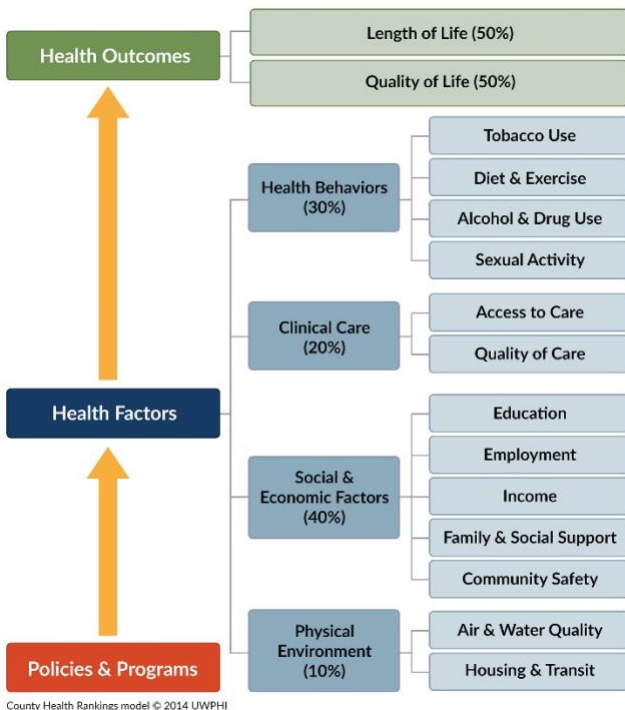
[www.countyhealthrankings.org](http://www.countyhealthrankings.org)

The County Health Rankings & Roadmaps (CHR&R) lifts up actionable data, evidence, guidance, and stories for communities to make it easier for people to be healthy in their neighborhoods, schools, and workplaces. Ranking the health of nearly every county in the nation (based on the model below), CHR&R illustrates what we currently know when it comes to what is keeping people healthy or making them sick and shows what we can do to create healthier places to live, learn, work, and play.

## What are the County Health Rankings?

Published online at [www.countyhealthrankings.org](http://www.countyhealthrankings.org), the Rankings help us understand what influences our health and how long and well we live. The Rankings are unique in their ability to provide measures of the current overall health of each county in all 50 states. They also look at a variety of measures that affect the future health of communities, such as high school graduation rates, access to healthy foods, rates of smoking, children in poverty, and teen births.

For the past 10 years, communities have used the Rankings to garner support for local health improvement initiatives by engaging government agencies, health care providers, community organizations, business leaders, policymakers, and the public.



## Moving with Data to Action

The [Take Action to Improve Health](#) section of our website helps communities join together to look at the many factors influencing health, select strategies that work, and make changes that can have a lasting impact. Take Action to Improve Health is a hub for information to help any community member or leader who wants to improve their community's health and foster health equity. You will find:

- [What Works for Health](#), a searchable menu of evidence-informed strategies that can make a difference locally;
- [The Action Center](#), your home for step-by-step guidance and tools to help you move with data to action;
- [Action Learning Guides](#), self-directed learning modules combining guidance, tools, and hands-on practice and reflection activities on specific topics;
- [The Partner Center](#), information to help you identify the right partners and explore tips to engage them.

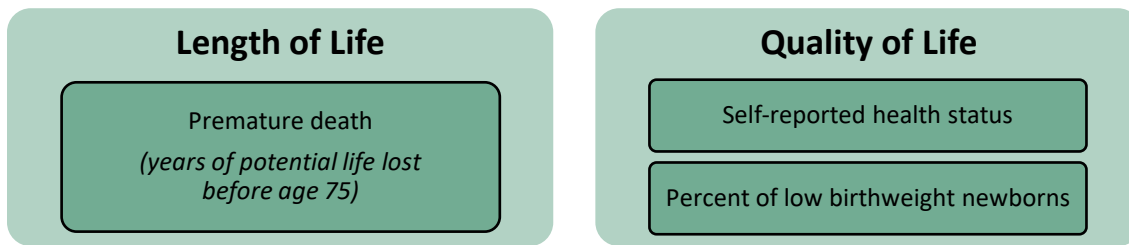
## Ensuring Healthy Places for All

Communities thrive when all people can be healthy in their neighborhoods, schools, and workplaces. CHR&R brings actionable data and strategies to communities working to ensure that healthy places are available to all. Pages 4 and 5 of this report highlights how health outcomes and health factors differ by place within your state. On pages 6 and 7, we illustrate how health differs among racial/ethnic groups within places.

The Robert Wood Johnson Foundation (RWJF) collaborates with the University of Wisconsin Population Health Institute (UWPHI) to bring this program to cities, counties, and states across the nation.

## What are Health Outcomes?

Everyone wants to experience long and healthy lives, yet places have different resources and opportunities. To understand the health outcomes in a community, we measure both length and quality of life by county within Virginia.



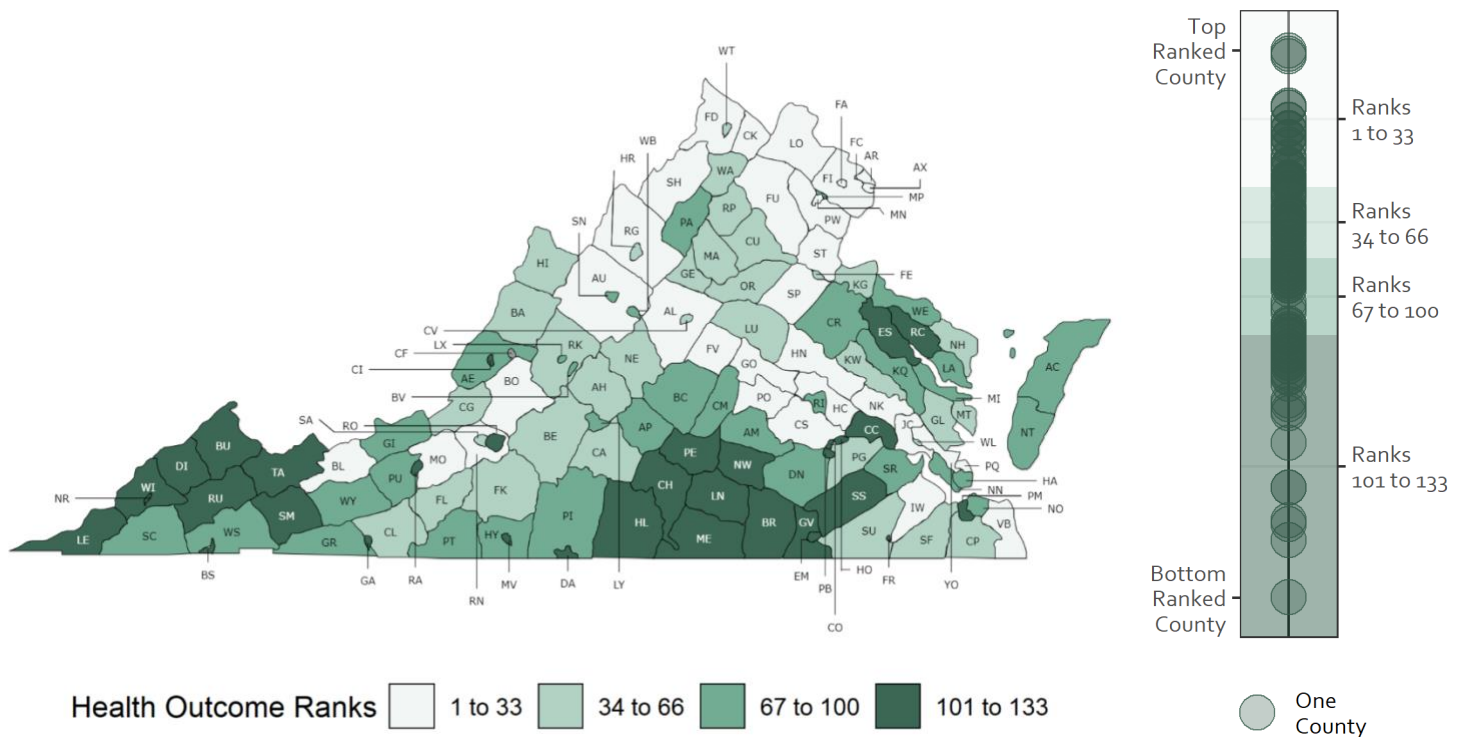
## How Do Counties Rank for Health Outcomes?

The green map shows the distribution of Virginia’s **health outcome ranks** across counties. The map is divided into four quartiles with less color intensity indicating better health outcomes in the respective summary rankings. Specific county ranks can be found in the table on page 2.

Detailed information on the measures and their associated weights is available on page 9. You can also learn about how we calculate health outcome ranks at [www.countyhealthrankings.org](http://www.countyhealthrankings.org).

## What Do Differences Between Ranks Mean?

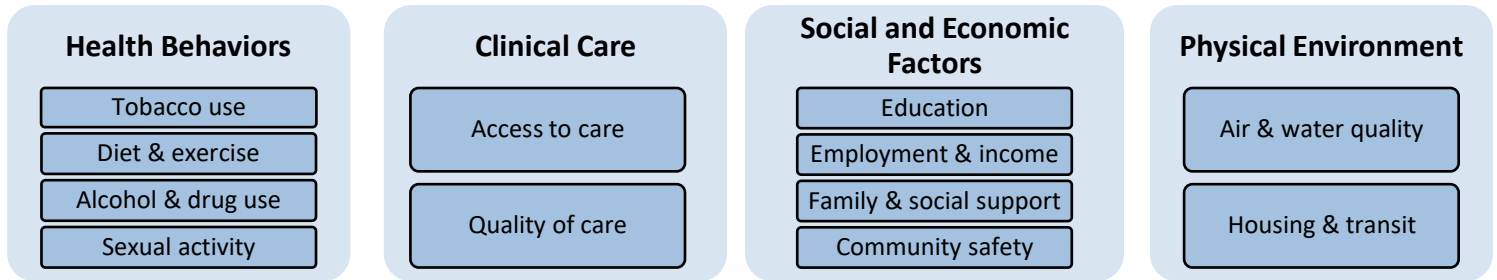
Counties are ordered by the health outcome rank, with a top-ranked county (rank = 1) having the best health outcome score. Ranks are easy to communicate, but they mask differences in health within counties and from one ranked county to the next. The chart next to the map shows the spread of health outcome scores (ranks) for each county (green circles) in Virginia. This graphic shows the size of the gap *between* ranked counties. The different background colors correspond to the four quartiles used in the map.



**Figure 1. Health outcome ranks displayed using quartiles (map) and underlying health outcome scores (chart)**

## What are Health Factors?

Many factors shape our opportunities to be healthy and influence how well and how long we live. Health factors represent the things we can change to improve health for all, like opportunities for quality education, good paying jobs, access to quality clinical care, healthy foods, green spaces, and secure and affordable housing. We measure four health factor areas.



## How Do Counties Rank for Health Factors?

The blue map shows the distribution of Virginia’s **health factor ranks** across counties. The map is divided into four quartiles with less color intensity indicating better health factors in the respective summary rankings. Specific county ranks can be found in the table on page 2.

Detailed information on the measures and their associated weights is available on page 9. You can also learn about how we calculate health factor ranks, at [www.countyhealthrankings.org](http://www.countyhealthrankings.org).

## What Do Differences Between Ranks Mean?

Counties are ordered by the health factor rank, with a top-ranked county (rank = 1) having the best health factor score. As previously noted, ranks mask differences in the opportunity for health within counties and from one county to the next. The chart next to the map shows the spread of health factor scores (ranks) for each ranked county (blue circles) in Virginia. This graphic shows the size of the gap *between* ranked counties. The different background colors correspond to the four quartiles used in the map.

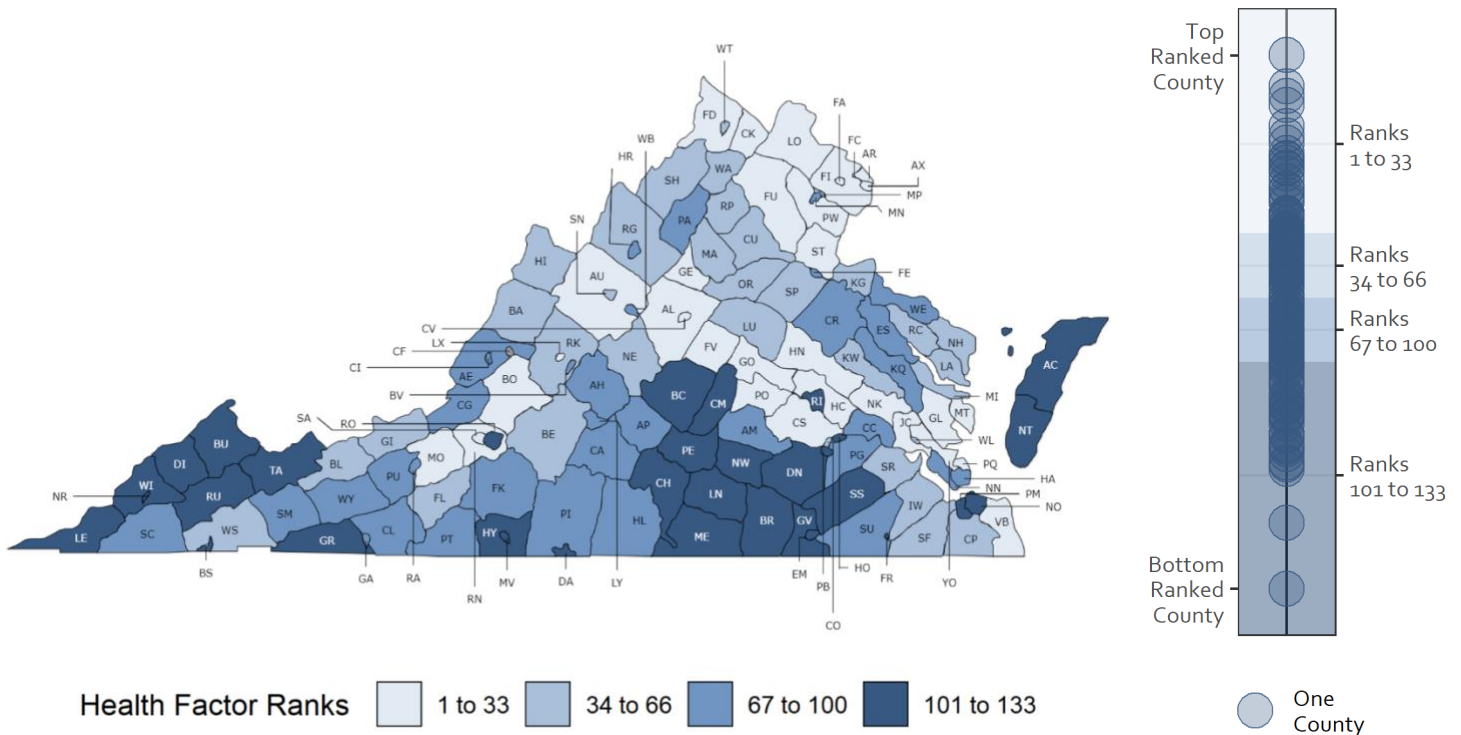


Figure 2. Health factor ranks displayed using quartiles (map) and underlying health factor scores (chart)



## Growing Healthy Places Means Ensuring Opportunities for All

Health is influenced by every aspect of how and where we live. Access to secure and affordable housing, safe neighborhoods, good paying jobs and quality early childhood education are examples of important factors that can put people on a path to a healthier life. But access to these opportunities often looks different based on where you live, the color of your skin, or the circumstances you were born into. Data show a persistent pattern in barriers to opportunity for people with lower incomes and for communities of color across the United States. Patterned differences in a range of health factors emerge from unfair policies and practices at many levels and over many decades.



Copyright 2019 Brian Adams. Photo courtesy of the Robert Wood Johnson Foundation.

### A Pattern of Unfair Differences Exists for People with Lower Incomes and Communities of Color in:

-  Access to Care
-  Air and Water Quality
-  Availability of Healthy Foods
-  Community Safety
-  Educational Supports
-  Employment Opportunities
-  Housing Opportunities
-  Income
-  Quality of Care

### Using Data for Action

Achieving health equity means reducing and ultimately eliminating unjust and avoidable differences in opportunity and health. Our progress toward health equity will be measured by how health disparities change over time. Visit [www.countyhealthrankings.org](http://www.countyhealthrankings.org) to learn more about:

1. Health outcome and factor measures for your state and county;
2. Measures that have data available for racial and ethnic groups to illuminate differences in opportunities for health in your state and county;
3. Additional data resources for Virginia that provide information about health and opportunity among other subgroups, such as gender, age, or zip code.

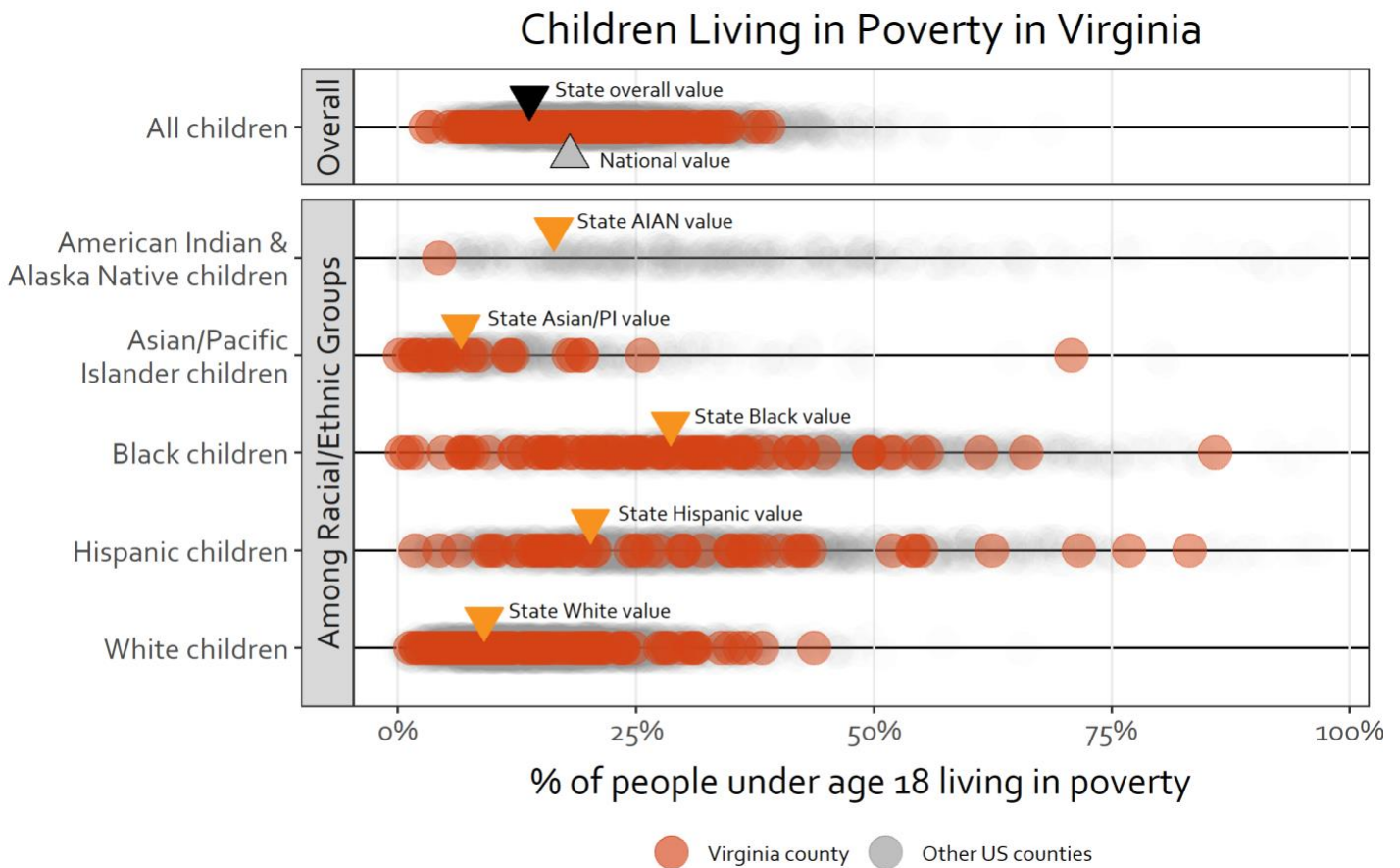
### What Has Been Done Can Be Undone

Many communities are mobilizing state and local efforts to harness the collective power of community members, partners, and policymakers – working together to dismantle unfair patterns and ensure the growth of healthy places for all. To learn from others who are igniting possibilities and inspiring action, visit our **Learn from Others** page at [www.countyhealthrankings.org](http://www.countyhealthrankings.org).

## Opportunities for Health Within Virginia Counties

A healthy beginning is essential to a healthy future for our children and our communities. **Children in poverty** is a measure of both current and future opportunities for the health of the community. Patterns of unfair and avoidable differences at the local, state, and national level exist among racial and ethnic groups for children living in poverty.

The graphic below shows the patterns of children living in poverty for individual counties in Virginia and among racial and ethnic groups within counties of Virginia. It also shows the data for all counties across the nation in the gray circles beneath the Virginia data.



Note: Extreme values or missing/suppressed values can occur in places with small populations.

## Key Takeaways for Children Living in Poverty in Virginia

Overall

- 14% of Virginia children are living in poverty, lower than the national average of 18%.
- Rates for children living in poverty range from 3% to 39% across Virginia counties.

Among Racial & Ethnic Groups

- Rates for children living in poverty differ among racial and ethnic groups in Virginia and the nation.
- In Virginia, state values (orange triangles) range from 7% for Asian/Pacific Islander children to 29% for Black children.
- Within Virginia counties (orange circles) and US counties (gray circles), rates of children living in poverty also vary among racial and ethnic groups.

Want to learn more? Visit our [State Reports page at www.countyhealthrankings.org](http://www.countyhealthrankings.org) to interact with the data and explore patterns in other measures by place and among racial and ethnic groups.

## 2020 County Health Rankings for Virginia: Measures and National/State Results

Measure	Description	US	VA	VA Minimum	VA Maximum
<b>HEALTH OUTCOMES</b>					
Premature death*	Years of potential life lost before age 75 per 100,000 population (age-adjusted).	6,900	6,400	2,800	18,800
Poor or fair health	Percentage of adults reporting fair or poor health (age-adjusted).	17%	16%	10%	29%
Poor physical health days	Average number of physically unhealthy days reported in past 30 days (age-adjusted).	3.8	3.5	2.5	5.1
Poor mental health days	Average number of mentally unhealthy days reported in past 30 days (age-adjusted).	4.0	3.8	2.9	4.9
Low birthweight*	Percentage of live births with low birthweight (< 2,500 grams).	8%	8%	5%	18%
<b>HEALTH FACTORS</b>					
<b>HEALTH BEHAVIORS</b>					
Adult smoking	Percentage of adults who are current smokers.	17%	16%	9%	24%
Adult obesity	Percentage of the adult population (age 20 and older) that reports a body mass index (BMI) greater than or equal to 30 kg/m2.	29%	30%	19%	52%
Food environment index	Index of factors that contribute to a healthy food environment, from 0 (worst) to 10 (best).	7.6	8.9	3.5	10.0
Physical inactivity	Percentage of adults age 20 and over reporting no leisure-time physical activity.	23%	23%	13%	38%
Access to exercise opportunities	Percentage of population with adequate access to locations for physical activity.	84%	82%	8%	100%
Excessive drinking	Percentage of adults reporting binge or heavy drinking.	19%	17%	12%	22%
Alcohol-impaired driving deaths	Percentage of driving deaths with alcohol involvement.	28%	30%	0%	75%
Sexually transmitted infections	Number of newly diagnosed chlamydia cases per 100,000 population.	524.6	500.3	69.7	1,417.3
Teen births*	Number of births per 1,000 female population ages 15-19.	23	18	4	74
<b>CLINICAL CARE</b>					
Uninsured	Percentage of population under age 65 without health insurance.	10%	10%	4%	18%
Primary care physicians	Ratio of population to primary care physicians.	1,330:1	1,320:1	15,030:1	350:1
Dentists	Ratio of population to dentists.	1,450:1	1,460:1	22,750:1	320:1
Mental health providers	Ratio of population to mental health providers.	400:1	570:1	22,750:1	70:1
Preventable hospital stays*	Rate of hospital stays for ambulatory-care sensitive conditions per 100,000 Medicare enrollees.	4,535	4,461	2,531	10,329
Mammography screening*	Percentage of female Medicare enrollees ages 65-74 that received an annual mammography screening.	42%	44%	33%	57%
Flu vaccinations*	Percentage of fee-for-service (FFS) Medicare enrollees that had an annual flu vaccination.	46%	50%	19%	60%
<b>SOCIAL &amp; ECONOMIC FACTORS</b>					
High school graduation	Percentage of ninth-grade cohort that graduates in four years.	85%	92%	75%	100%
Some college	Percentage of adults ages 25-44 with some post-secondary education.	66%	71%	29%	91%
Unemployment	Percentage of population ages 16 and older unemployed but seeking work.	3.9%	3.0%	2.0%	6.1%
Children in poverty*	Percentage of people under age 18 in poverty.	18%	14%	3%	39%
Income inequality	Ratio of household income at the 80th percentile to income at the 20th percentile.	4.9	4.8	3.0	6.6
Children in single-parent households	Percentage of children that live in a household headed by single parent.	33%	30%	13%	77%
Social associations	Number of membership associations per 10,000 population.	9.3	11.4	0.0	38.0
Violent crime	Number of reported violent crime offenses per 100,000 population.	386	207	40	714
Injury deaths*	Number of deaths due to injury per 100,000 population.	70	63	22	139
<b>PHYSICAL ENVIRONMENT</b>					
Air pollution - particulate matter	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5).	8.6	8.9	7.7	10.1
Drinking water violations	Indicator of the presence of health-related drinking water violations. 'Yes' indicates the presence of a violation, 'No' indicates no violation.	N/A	N/A	No	Yes
Severe housing problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities.	18%	15%	7%	26%
Driving alone to work*	Percentage of the workforce that drives alone to work.	76%	77%	52%	96%
Long commute - driving alone	Among workers who commute in their car alone, the percentage that commute more than 30 minutes.	36%	40%	11%	83%

\* Indicates subgroup data by race and ethnicity is available



## 2020 County Health Rankings: Ranked Measure Sources and Years of Data

	Measure	Weight	Source	Years of Data
<b>HEALTH OUTCOMES</b>				
Length of Life	Premature death*	50%	National Center for Health Statistics - Mortality Files	2016-2018
Quality of Life	Poor or fair health	10%	Behavioral Risk Factor Surveillance System	2017
	Poor physical health days	10%	Behavioral Risk Factor Surveillance System	2017
	Poor mental health days	10%	Behavioral Risk Factor Surveillance System	2017
	Low birthweight*	20%	National Center for Health Statistics - Natality files	2012-2018
<b>HEALTH FACTORS</b>				
<b>HEALTH BEHAVIORS</b>				
Tobacco Use	Adult smoking	10%	Behavioral Risk Factor Surveillance System	2017
Diet and Exercise	Adult obesity	5%	United States Diabetes Surveillance System	2016
	Food environment index	2%	USDA Food Environment Atlas, Map the Meal Gap from Feeding America	2015 & 2017
	Physical inactivity	2%	United States Diabetes Surveillance System	2016
	Access to exercise opportunities	1%	Business Analyst, Delorme map data, ESRI, & US Census Tigerline Files	2010 & 2019
Alcohol and Drug Use	Excessive drinking	2.5%	Behavioral Risk Factor Surveillance System	2017
	Alcohol-impaired driving deaths	2.5%	Fatality Analysis Reporting System	2014-2018
Sexual Activity	Sexually transmitted infections	2.5%	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2017
	Teen births*	2.5%	National Center for Health Statistics - Natality files	2012-2018
<b>CLINICAL CARE</b>				
Access to Care	Uninsured	5%	Small Area Health Insurance Estimates	2017
	Primary care physicians	3%	Area Health Resource File/American Medical Association	2017
	Dentists	1%	Area Health Resource File/National Provider Identification file	2018
	Mental health providers	1%	CMS, National Provider Identification	2019
Quality of Care	Preventable hospital stays*	5%	Mapping Medicare Disparities Tool	2017
	Mammography screening*	2.5%	Mapping Medicare Disparities Tool	2017
	Flu vaccinations*	2.5%	Mapping Medicare Disparities Tool	2017
<b>SOCIAL &amp; ECONOMIC FACTORS</b>				
Education	High school graduation	5%	Virginia Department of Education	2017-2018
	Some college	5%	American Community Survey, 5-year estimates	2014-2018
Employment	Unemployment	10%	Bureau of Labor Statistics	2018
Income	Children in poverty*	7.5%	Small Area Income and Poverty Estimates	2018
	Income inequality	2.5%	American Community Survey, 5-year estimates	2014-2018
Family and Social Support	Children in single-parent households	2.5%	American Community Survey, 5-year estimates	2014-2018
	Social associations	2.5%	County Business Patterns	2017
Community Safety	Violent crime	2.5%	Uniform Crime Reporting - FBI	2014&2016
	Injury deaths*	2.5%	National Center for Health Statistics - Mortality Files	2014-2018
<b>PHYSICAL ENVIRONMENT</b>				
Air and Water Quality	Air pollution - particulate matter <sup>+</sup>	2.5%	Environmental Public Health Tracking Network	2014
	Drinking water violations	2.5%	Safe Drinking Water Information System	2018
Housing and Transit	Severe housing problems	2%	Comprehensive Housing Affordability Strategy (CHAS) data	2012-2016
	Driving alone to work*	2%	American Community Survey, 5-year estimates	2014-2018
	Long commute - driving alone	1%	American Community Survey, 5-year estimates	2014-2018

\* Indicates subgroup data by race and ethnicity is available

+ Not available for AK and HI

## 2020 County Health Rankings: Additional Measure Sources and Years of Data

	Measure	Source	Years of Data
<b>HEALTH OUTCOMES</b>			
Length of Life	Life expectancy*	National Center for Health Statistics - Mortality Files	2016-2018
	Premature age-adjusted mortality*	National Center for Health Statistics - Mortality Files	2016-2018
	Child mortality*	National Center for Health Statistics - Mortality Files	2015-2018
	Infant mortality*	National Center for Health Statistics - Mortality Files	2012-2018
Quality of Life	Frequent physical distress	Behavioral Risk Factor Surveillance System	2017
	Frequent mental distress	Behavioral Risk Factor Surveillance System	2017
	Diabetes prevalence	United States Diabetes Surveillance System	2016
	HIV prevalence	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2016
<b>HEALTH FACTORS</b>			
<b>HEALTH BEHAVIORS</b>			
Diet and Exercise	Food insecurity	Map the Meal Gap	2017
	Limited access to healthy foods	USDA Food Environment Atlas	2015
Alcohol and Drug Use	Drug overdose deaths*	National Center for Health Statistics - Mortality Files	2016-2018
	Motor vehicle crash deaths*	National Center for Health Statistics - Mortality Files	2012-2018
Other Health Behaviors	Insufficient sleep	Behavioral Risk Factor Surveillance System	2016
<b>CLINICAL CARE</b>			
Access to Care	Uninsured adults	Small Area Health Insurance Estimates	2017
	Uninsured children	Small Area Health Insurance Estimates	2017
	Other primary care providers	CMS, National Provider Identification	2019
<b>SOCIAL &amp; ECONOMIC FACTORS</b>			
Education	Disconnected youth	American Community Survey, 5-year estimates	2014-2018
	Reading scores**	Stanford Education Data Archive	2016
	Math scores**	Stanford Education Data Archive	2016
Income	Median household income*	Small Area Income and Poverty Estimates	2018
	Children eligible for free or reduced price lunch	National Center for Education Statistics	2017-2018
Family and Social Support	Residential segregation - Black/White	American Community Survey, 5-year estimates	2014-2018
	Residential segregation - non-White/White	American Community Survey, 5-year estimates	2014-2018
Community Safety	Homicides*	National Center for Health Statistics - Mortality Files	2012-2018
	Suicides*	National Center for Health Statistics - Mortality Files	2014-2018
	Firearm fatalities*	National Center for Health Statistics - Mortality Files	2014-2018
	Juvenile arrests*	Easy Access to State and County Juvenile Court Case Counts	2017
<b>PHYSICAL ENVIRONMENT</b>			
Housing and Transit	Traffic volume	EJSCREEN: Environmental Justice Screening and Mapping Tool	2018
	Homeownership	American Community Survey, 5-year estimates	2014-2018
	Severe housing cost burden	American Community Survey, 5-year estimates	2014-2018

\*Indicates subgroup data by race and ethnicity is available.

\* Not available in all states

See additional contextual demographic information and measures online at [www.countyhealthrankings.org](http://www.countyhealthrankings.org)

## Technical Notes and Glossary of Terms

### What is health equity? What are health disparities? And how do they relate?

**Health equity** means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty and discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.

**Health disparities** are differences in health or in the key determinants of health such as education, safe housing, and discrimination, which adversely affect marginalized or excluded groups.

Health equity and health disparities are closely related to each other. Health equity is the ethical and human rights principle or value that motivates us to eliminate health disparities. Reducing and ultimately eliminating disparities in health and its determinants of health is how we measure progress toward health equity.

*Braveman P, Arkin E, Orleans T, Proctor D, and Plough A. What is Health Equity? And What Difference Does a Definition Make? Robert Wood Johnson Foundation. May 2017*

### How do we define racial and ethnic groups?

In our analyses by race and ethnicity we define each category as follows:

- Hispanic includes those who identify themselves as Mexican, Puerto Rican, Cuban, Central or South American, other Hispanic, or Hispanic of unknown origin and can be of any racial background.
- American Indian & Alaska Native (AIAN) includes people who identify themselves as American Indian or Alaska Native.
- Asian/Pacific Islander (Asian/PI) includes people who identify themselves as Asian or Pacific Islander.
- Black includes people who identify themselves as Black or African American.
- White includes people who identify themselves as White and do not identify as Hispanic.

Our analyses do not include people reporting more than one race, as this category was not measured uniformly across the data sources used in the County Health Rankings. These racial and ethnic categories can mask variation within groups and can hide historical context that underlies health differences.

We recognize that “race” is a social category, meaning the way society may identify individuals based on their cultural ancestry, not a way of characterizing individuals based on biology or genetics. A strong and growing body of empirical research provides support for the fact that genetic factors are not responsible for racial differences in health factors and very rarely for health outcomes.

### How do we rank counties?

To calculate the ranks, we first standardize each of the measures using z-scores. Z-scores allow us to combine multiple measures because the measures are now on the same scale. The ranks are then calculated based on weighted sums of the measure z-scores within each state to create an aggregate z-score. The county with the best aggregate z-score (healthiest) gets a rank of #1 for that state. The aggregate z-scores are graphed next to the maps for health outcomes and health factors on pages 4 and 5 to show the distribution of the values that contribute to the rank. To see more detailed information on rank calculation please visit our methods in **Explore Health Rankings** on our website: [www.countyhealthrankings.org](http://www.countyhealthrankings.org).

### Technical Notes:

- In this report, we use the terms disparities, differences, and gaps interchangeably.
- We follow basic design principles for cartography in displaying color spectrums with less intensity for lower values and increasing color intensity for higher values. We do not intend to elicit implicit biases that “darker is bad”.
- Overall county level values of children in poverty are obtained from one-year modeled estimates from the Small Area Income and Poverty Estimates (SAIPE) Program. Because SAIPE does not provide estimates by racial and ethnic groups, data from the 5-year American Community Survey (ACS) was used to quantify children living in poverty by racial and ethnic groups.
- County-level data for children in poverty among racial and ethnic groups are not shown if the estimate was considered to be unreliable (confidence interval width was greater than 40% or value was 0% or 100%). Unreliable estimates are often due to a very small sample size.
- Given the suppression of data for small sample sizes particularly for county data by race, there may be a gap between the state value and the data for the county data that are available.
- In many of the images using one circle to depict a county the values are very close causing overlapping circles. In these cases, greater color intensity indicates overlapping of multiple counties.

## Report Authors

Courtney Blomme, MS, RD  
Anne Roubal, PhD, MS  
Marjory Givens, PhD, MSPH  
Sheri Johnson, PhD  
Lawrence Brown, PhD

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### Research Assistance:

Molly Burdine	Joe Hinton, MA	Elizabeth Pollock, PhD
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### County Health Rankings & Roadmaps

Building a Culture of Health, County by County

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### University of Wisconsin Population Health Institute

610 Walnut St, #524, Madison, WI 53726 | (608) 265-8240 | [info@countyhealthrankings.org](mailto:info@countyhealthrankings.org)