

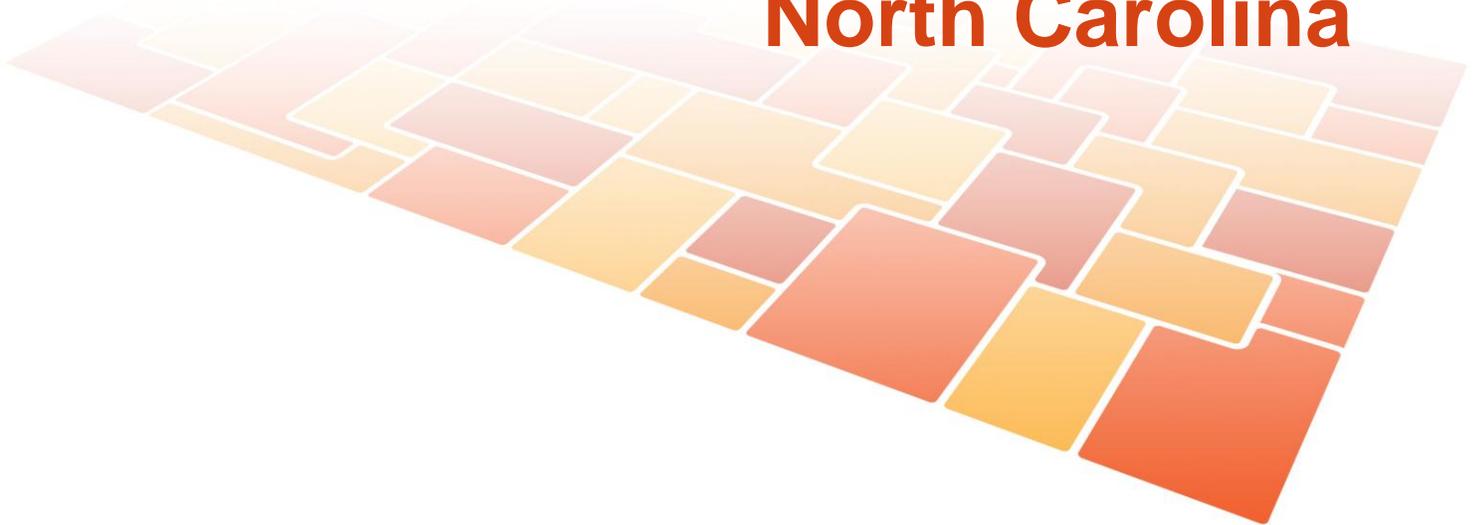


County Health Rankings

Mobilizing Action Toward Community Health

2011

North Carolina



Robert Wood Johnson Foundation



UNIVERSITY OF WISCONSIN

Population Health Institute

Translating Research into Policy and Practice

Introduction

Where we live matters to our health. The health of a community depends on many different factors, including quality of health care, individual behavior, education and jobs, and the environment. We can improve a community's health through programs and policies. For example, people who live in communities with ample park and recreation space are more likely to exercise, which reduces heart disease risk. People who live in communities with smoke-free laws are less likely to smoke or to be exposed to second-hand smoke, which reduces lung cancer risk.

The problem is that there are big differences in health across communities, with some places being much healthier than others. And up to now, it has been hard to get a standard way to measure how healthy a county is and see where they can improve.

The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute are pleased to present the 2011 *County Health Rankings*, a collection of 50 reports that reflect the overall health of counties in every state across the country. For the second year in a row, counties can get a snapshot of how healthy their residents are by comparing their overall health and the factors that influence their health with other counties in their state. This allows communities to see county-to-county where they are doing well and where they need to improve.

Everyone has a stake in community health. We all need to work together to find solutions. The *County Health Rankings* serve as both a call to action and a needed tool in this effort.

All of the *County Health Rankings* are based upon this model of population health improvement:



In this model, health outcomes are measures that describe the current health status of a county. These health outcomes are influenced by a set of health factors. These health factors and their outcomes may also be affected by community-based programs and policies designed to alter their distribution in the community. Counties can improve health outcomes by addressing all health factors with effective, evidence-based programs and policies.

To compile the *Rankings*, we built on our prior work in Wisconsin, obtained input from a team of expert advisors, and worked closely with staff from the National Center for Health Statistics. Together we selected a number of population health measures based on scientific relevance, importance, and availability of data at the county level.

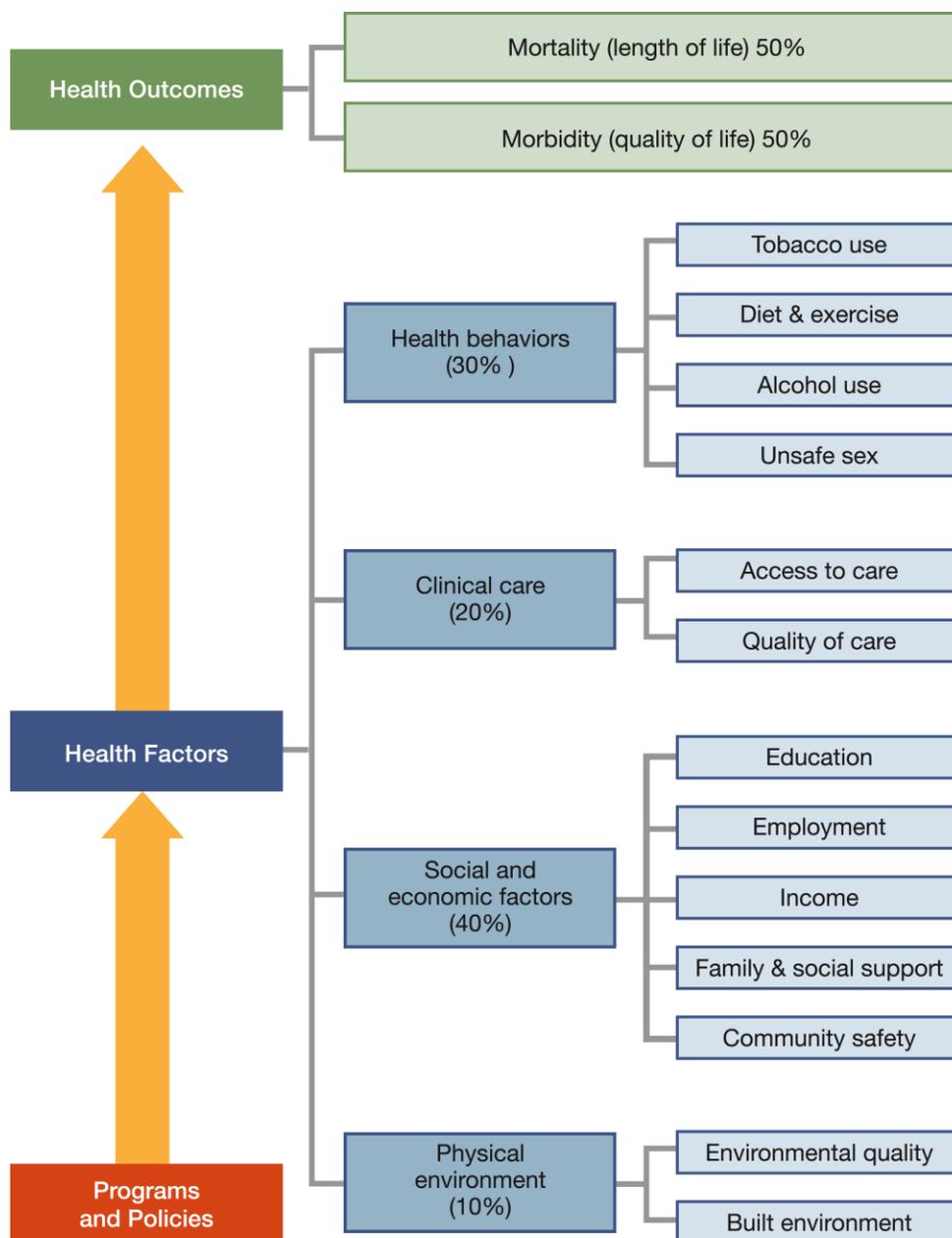
For a more detailed explanation of our approach, the methods used to compile the *Rankings*, information on the action steps communities can take to improve their health, and examples of communities in action, see www.countyhealthrankings.org



The Rankings

This report ranks North Carolina counties according to their summary measures of **health outcomes** and **health factors**, as well as the components used to create each summary measure. The figure below depicts the structure of the *Rankings* model. Counties receive a rank for each population health component; those having high ranks (e.g., 1 or 2) are estimated to be the “healthiest.”

Our summary **health outcomes** rankings are based on an equal weighting of mortality and morbidity measures. The summary **health factors** rankings are based on weighted scores of four types of factors: behavioral, clinical, social and economic, and environmental. The weights for the factors (shown in parentheses in the figure) are based upon a review of the literature and expert input, but represent just one way of combining these factors.

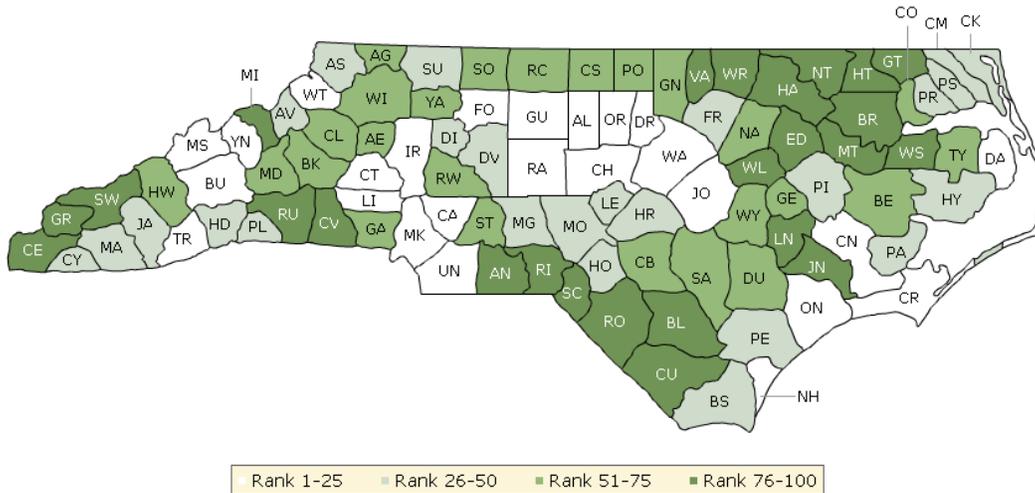


County Health Rankings model ©2010 UWPHI

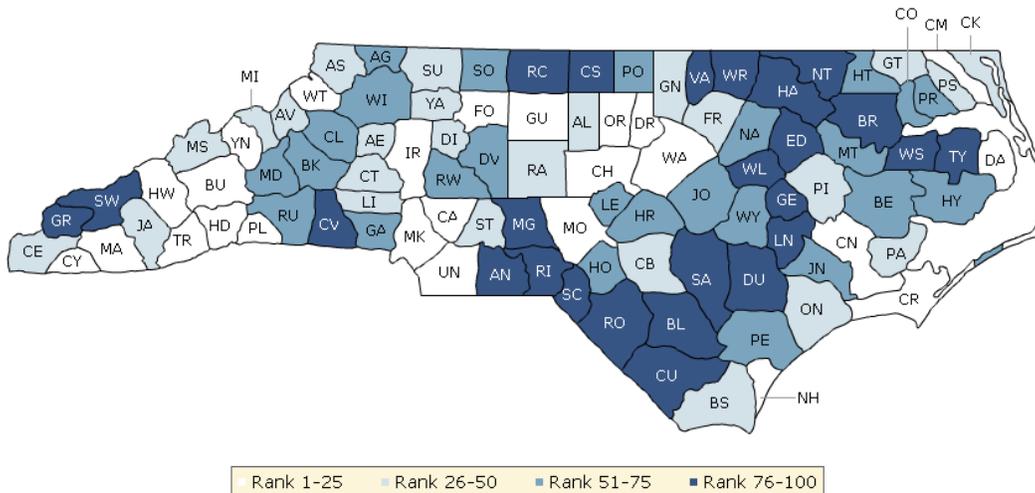
The maps on this page display North Carolina's counties divided into groups by health rank. The lighter colors indicate better performance in the respective summary rankings. The green map shows the distribution of summary health outcomes. The blue displays the distribution of the summary rank for health factors.

Maps help locate the healthiest and least healthy counties in the state. The health factors map appears similar to the health outcomes map, showing how health factors and health outcomes are closely related.

HEALTH OUTCOMES



HEALTH FACTORS



Summary Health Outcomes & Health Factors Rankings

Counties receive two summary ranks:

- Health Outcomes
- Health Factors

Each of these ranks represents a weighted summary of a number of measures.

Health outcomes represent how healthy a county is while health factors are what influences the health of the county.

Rank	Health Outcomes	Rank	Health Factors
1	Wake	1	Orange
2	Orange	2	Wake
3	Union	3	Buncombe
4	Watauga	4	New Hanover
5	Mecklenburg	5	Watauga
6	Dare	6	Henderson
7	Cabarrus	7	Union
8	New Hanover	8	Polk
9	Durham	9	Durham
10	Guilford	10	Moore
11	Chatham	11	Transylvania
12	Onslow	12	Chatham
13	Carteret	13	Forsyth
14	Madison	14	Macon
15	Iredell	15	Mecklenburg
16	Yancey	16	Clay
17	Buncombe	17	Guilford
18	Catawba	18	Camden
19	Transylvania	19	Cabarrus
20	Alamance	20	Haywood
21	Lincoln	21	Carteret
22	Forsyth	22	Iredell
23	Randolph	23	Dare
24	Johnston	24	Yancey
25	Craven	25	Craven
26	Jackson	26	Davie
27	Polk	27	Catawba
28	Henderson	28	Stanly
29	Moore	29	Jackson
30	Pasquotank	30	Mitchell
31	Pender	31	Lincoln
32	Ashe	32	Onslow
33	Davie	33	Pamlico
34	Macon	34	Madison
35	Clay	35	Brunswick
36	Harnett	36	Cherokee
37	Camden	37	Pitt
38	Lee	38	Currituck
39	Davidson	39	Alamance
40	Pamlico	40	Yadkin
41	Perquimans	41	Alexander
42	Pitt	42	Gates
43	Currituck	43	Ashe
44	Montgomery	44	Granville
45	Avery	45	Avery

Rank	Health Outcomes	Rank	Health Factors
46	Hyde	46	Surry
47	Franklin	47	Randolph
48	Brunswick	48	Pasquotank
49	Hoke	49	Cumberland
50	Surry	50	Franklin
51	Duplin	51	Burke
52	Cumberland	52	Johnston
53	Wayne	53	Gaston
54	Caldwell	54	Pender
55	Tyrrell	55	Caldwell
56	Alexander	56	Wayne
57	Yadkin	57	Beaufort
58	Person	58	Hyde
59	McDowell	59	Lee
60	Beaufort	60	Perquimans
61	Nash	61	McDowell
62	Rowan	62	Davidson
63	Burke	63	Jones
64	Stanly	64	Rutherford
65	Haywood	65	Alleghany
66	Alleghany	66	Person
67	Caswell	67	Nash
68	Granville	68	Wilkes
69	Wilkes	69	Chowan
70	Greene	70	Hertford
71	Sampson	71	Harnett
72	Chowan	72	Stokes
73	Stokes	73	Rowan
74	Rockingham	74	Hoke
75	Gaston	75	Martin
76	Wilson	76	Lenoir
77	Cleveland	77	Washington
78	Washington	78	Cleveland
79	Cherokee	79	Wilson
80	Graham	80	Sampson
81	Gates	81	Caswell
82	Rutherford	82	Greene
83	Lenoir	83	Duplin
84	Mitchell	84	Bertie
85	Jones	85	Montgomery
86	Martin	86	Rockingham
87	Anson	87	Northampton
88	Richmond	88	Bladen
89	Scotland	89	Richmond
90	Swain	90	Graham
91	Hertford	91	Halifax
92	Bertie	92	Swain
93	Northampton	93	Tyrrell
94	Vance	94	Columbus
95	Edgecombe	95	Warren
96	Bladen	96	Scotland
97	Warren	97	Anson
98	Robeson	98	Vance
99	Halifax	99	Edgecombe
100	Columbus	100	Robeson

Health Outcomes Rankings

The summary health outcomes ranking is based on measures of mortality and morbidity. Each county's ranks for mortality and morbidity are displayed here. The mortality rank, representing length of life, is based on a measure of premature death: the years of potential life lost prior to age 75.

The morbidity rank is based on measures that represent health-related quality of life and birth outcomes. We combine four morbidity measures: self-reported fair or poor health, poor physical health days, poor mental health days, and the percent of births with low birthweight.

Rank	Mortality	Morbidity
1	Wake	Wake
2	Orange	Orange
3	Union	Union
4	Watauga	Polk
5	Mecklenburg	Transylvania
6	New Hanover	Macon
7	Dare	Mecklenburg
8	Durham	Jackson
9	Cabarrus	Cabarrus
10	Chatham	Craven
11	Guilford	Watauga
12	Johnston	Guilford
13	Pasquotank	Person
14	Onslow	Carteret
15	Buncombe	Moore
16	Madison	Dare
17	Davie	Onslow
18	Alamance	Clay
19	Yancey	Iredell
20	Carteret	Durham
21	Catawba	Chatham
22	Iredell	Lincoln
23	Forsyth	Madison
24	Henderson	Randolph
25	Randolph	New Hanover
26	Lincoln	Nash
27	Alleghany	Pamlico
28	Pender	Catawba
29	Harnett	Forsyth
30	Ashe	Brunswick
31	Perquimans	Yancey
32	Franklin	Avery
33	Rowan	Pender
34	McDowell	Ashe
35	Moore	Buncombe
36	Craven	Alamance
37	Chowan	Henderson
38	Davidson	Wayne
39	Transylvania	Lee
40	Jackson	Camden
41	Pitt	Duplin
42	Caldwell	Currituck
43	Camden	Harnett
44	Clay	Johnston
45	Hyde	Davidson

Rank	Mortality	Morbidity
46	Surry	Montgomery
47	Hoke	Pitt
48	Lee	Hyde
49	Montgomery	Pasquotank
50	Stanly	Graham
51	Burke	Beaufort
52	Polk	Davie
53	Cumberland	Rockingham
54	Currituck	Sampson
55	Caswell	Hoke
56	Tyrrell	Alexander
57	Macon	Yadkin
58	Alexander	Cumberland
59	Yadkin	Perquimans
60	Gates	Surry
61	Haywood	Tyrrell
62	Pamlico	Swain
63	Stokes	Greene
64	Wilkes	Franklin
65	Avery	Haywood
66	Granville	Granville
67	Beaufort	Gaston
68	Duplin	Caldwell
69	Brunswick	Martin
70	Wayne	Wilson
71	Greene	Wilkes
72	Cleveland	Rutherford
73	Sampson	Washington
74	Gaston	Caswell
75	Jones	Burke
76	Wilson	Cherokee
77	Lenoir	Stanly
78	Cherokee	McDowell
79	Nash	Cleveland
80	Mitchell	Scotland
81	Washington	Rowan
82	Rockingham	Stokes
83	Person	Anson
84	Rutherford	Bertie
85	Northampton	Lenoir
86	Graham	Alleghany
87	Richmond	Robeson
88	Hertford	Chowan
89	Anson	Vance
90	Warren	Richmond
91	Scotland	Mitchell
92	Martin	Edgecombe
93	Halifax	Gates
94	Vance	Hertford
95	Bertie	Bladen
96	Columbus	Jones
97	Edgecombe	Columbus
98	Bladen	Halifax
99	Swain	Northampton
100	Robeson	Warren

Health Factors Rankings

The summary health factors ranking is based on four factors: health behaviors, clinical care, social and economic, and physical environment factors. In turn, each of these factors is based on several measures. Health behaviors include measures of smoking, diet and exercise, alcohol use, and risky sex behavior. Clinical

care includes measures of access to care and quality of care. Social and economic factors include measures of education, employment, income, family and social support, and community safety. The physical environment includes measures of environmental quality and the built environment.

Rank	Health Behaviors	Rank	Clinical Care	Rank	Social & Economic Factors	Rank	Physical Environment
1	Orange	1	Orange	1	Orange	1	Lee
2	Yancey	2	Durham	2	Wake	2	Lenoir
3	Polk	3	Buncombe	3	Camden	3	Dare
4	Wake	4	New Hanover	4	Watauga	4	Pasquotank
5	Buncombe	5	Pitt	5	Currituck	5	Perquimans
6	Mecklenburg	6	Chowan	6	Union	6	Rutherford
7	Henderson	7	Haywood	7	Dare	7	Swain
8	Watauga	8	Guilford	8	Onslow	7	Washington
9	Union	9	Transylvania	9	Carteret	9	Hyde
10	Transylvania	10	Moore	10	Chatham	10	Franklin
11	Clay	11	Wake	11	New Hanover	11	New Hanover
12	Macon	12	Catawba	12	Henderson	12	Chatham
13	Mitchell	13	Forsyth	13	Buncombe	13	Caldwell
14	Ashe	14	Hertford	14	Cabarrus	14	Yadkin
15	New Hanover	15	Henderson	15	Polk	15	Stanly
16	Forsyth	16	Edgecombe	16	Transylvania	16	Person
17	Durham	17	Nash	17	Iredell	17	Polk
18	Guilford	18	Craven	18	Moore	18	Beaufort
19	Moore	19	Rutherford	19	Davie	19	Henderson
20	Avery	20	Macon	20	Mecklenburg	20	Cherokee
21	Lincoln	21	Halifax	21	Durham	21	Carteret
22	Greene	22	Caswell	22	Haywood	21	Pender
23	Chatham	23	Mecklenburg	23	Jackson	23	Clay
24	Catawba	24	McDowell	24	Johnston	23	Madison
25	Cherokee	25	Gaston	25	Clay	25	Alamance
26	Iredell	26	Beaufort	26	Guilford	26	Moore
27	Camden	27	Granville	27	Pamlico	27	Northampton
28	Alexander	28	Alamance	28	Forsyth	28	Halifax
29	Gates	29	Cabarrus	29	Gates	29	Brunswick
30	Cabarrus	30	Cleveland	30	Craven	29	Robeson
31	Alleghany	31	Stanly	31	Macon	31	Orange
32	Craven	32	Vance	32	Yadkin	32	Onslow
33	Haywood	33	Burke	33	Avery	33	Avery
34	Madison	34	Jackson	34	Cumberland	33	Tyrrell
35	Davie	35	Caldwell	35	Granville	35	Burke
36	Lee	36	Cherokee	36	Pender	36	Craven
37	Graham	37	Madison	37	Franklin	37	Macon
38	Martin	38	Pamlico	38	Pasquotank	38	Randolph
39	Brunswick	39	Rowan	39	Stokes	39	Watauga
40	Stanly	40	Bladen	40	Stanly	40	Duplin
41	Randolph	41	Brunswick	41	Harnett	41	Buncombe
42	Wilson	42	Cumberland	42	Lincoln	42	Alexander
43	Alamance	43	Carteret	43	Brunswick	43	Hoke
44	Gaston	44	Surry	44	Surry	44	Wayne
45	Duplin	45	Columbus	45	Yancey	45	Harnett

Rank	Health Behaviors	Rank	Clinical Care	Rank	Social & Economic Factors	Rank	Physical Environment
46	Davidson	46	Pasquotank	46	Madison	46	Warren
47	Pitt	47	Union	47	Randolph	47	Rockingham
48	Jackson	48	Chatham	48	Catawba	48	Cleveland
49	Burke	49	Scotland	49	Wayne	49	Johnston
50	Rutherford	50	Polk	50	Alamance	50	Cabarrus
51	Carteret	51	Wilson	51	Hoke	51	Surry
52	Yadkin	52	Mitchell	52	Perquimans	52	Sampson
53	Wilkes	53	Alexander	53	Pitt	53	Iredell
54	Surry	54	Bertie	54	Rowan	54	Mitchell
55	Jones	55	Northampton	55	Mitchell	55	Davie
56	McDowell	56	Clay	56	Person	56	Davidson
57	Caldwell	57	Randolph	57	Jones	57	Union
58	Hyde	58	Iredell	58	Alleghany	58	Forsyth
59	Cleveland	59	Lincoln	59	Hyde	59	Granville
60	Pamlico	60	Yancey	60	Alexander	60	Durham
61	Tyrrell	61	Person	61	Beaufort	61	Pamlico
62	Richmond	62	Wayne	62	Swain	62	Hertford
63	Anson	63	Davie	63	Burke	63	Caswell
64	Chowan	64	Wilkes	64	Davidson	64	Vance
65	Wayne	65	Washington	65	Ashe	65	Jones
66	Rowan	66	Dare	66	Gaston	66	Gaston
67	Nash	67	Lee	67	McDowell	67	Currituck
68	Montgomery	68	Lenoir	68	Cherokee	68	Transylvania
69	Washington	69	Watauga	69	Caldwell	69	Haywood
70	Perquimans	70	Anson	70	Nash	70	Bertie
71	Beaufort	71	Perquimans	71	Wilkes	71	Columbus
72	Lenoir	72	Ashe	72	Sampson	72	Cumberland
73	Franklin	73	Davidson	73	Rockingham	73	Pitt
74	Dare	74	Montgomery	74	Hertford	74	Martin
75	Harnett	75	Jones	75	Duplin	75	Ashe
76	Granville	76	Hyde	76	Lee	76	Wilkes
77	Person	77	Pender	77	Martin	77	Wilson
78	Johnston	78	Franklin	78	Caswell	78	Yancey
79	Cumberland	79	Martin	79	Greene	79	Bladen
80	Sampson	80	Graham	80	Lenoir	80	Stokes
81	Pender	81	Rockingham	81	Washington	81	Alleghany
82	Hoke	82	Sampson	82	Chowan	82	Chowan
83	Onslow	83	Robeson	83	Montgomery	83	Catawba
84	Hertford	84	Richmond	84	Bertie	84	Richmond
85	Bladen	85	Johnston	85	Rutherford	85	Montgomery
86	Pasquotank	86	Onslow	86	Cleveland	86	Nash
87	Bertie	87	Stokes	87	Wilson	87	Scotland
88	Northampton	88	Yadkin	88	Richmond	88	Lincoln
89	Stokes	89	Tyrrell	89	Northampton	89	McDowell
90	Caswell	90	Warren	90	Bladen	90	Camden
91	Scotland	91	Camden	91	Warren	90	Gates
92	Currituck	92	Hoke	92	Columbus	92	Wake
93	Warren	93	Currituck	93	Graham	93	Jackson
94	Columbus	94	Gates	94	Halifax	94	Guilford
95	Halifax	95	Alleghany	95	Tyrrell	95	Graham
96	Rockingham	96	Harnett	96	Scotland	96	Anson
97	Vance	97	Duplin	97	Vance	97	Greene
98	Swain	98	Greene	98	Anson	98	Edgecombe
99	Edgecombe	99	Swain	99	Edgecombe	99	Mecklenburg
100	Robeson	100	Avery	100	Robeson	100	Rowan

2011 County Health Rankings: Measures, Data Sources, and Years of Data

	Measure	Data Source	Years of Data
HEALTH OUTCOMES			
Mortality	Premature death	National Center for Health Statistics	2005-2007
Morbidity	Poor or fair health	Behavioral Risk Factor Surveillance System	2003-2009
	Poor physical health days	Behavioral Risk Factor Surveillance System	2003-2009
	Poor mental health days	Behavioral Risk Factor Surveillance System	2003-2009
	Low birthweight	National Center for Health Statistics	2001-2007
HEALTH FACTORS			
HEALTH BEHAVIORS			
Tobacco	Adult smoking	Behavioral Risk Factor Surveillance System	2003-2009
Diet and Exercise	Adult obesity	National Center for Chronic Disease Prevention and Health Promotion	2008
Alcohol Use	Excessive drinking	Behavioral Risk Factor Surveillance System	2003-2009
	Motor vehicle crash death rate	National Center for Health Statistics	2001-2007
High Risk Sexual Behavior	Sexually transmitted infections	National Center for Hepatitis, HIV, STD and TB Prevention	2008
	Teen birth rate	National Center for Health Statistics	2001-2007
CLINICAL CARE			
Access to Care	Uninsured adults	Small Area Health Insurance Estimates, U.S. Census	2007
	Primary care providers	Health Resources & Services Administration	2008
Quality of Care	Preventable hospital stays	Medicare/Dartmouth Institute	2006-2007
	Diabetic screening	Medicare/Dartmouth Institute	2006-2007
	Mammography screening	Medicare/Dartmouth Institute	2006-2007
SOCIOECONOMIC FACTORS			
Education	High school graduation	National Center for Education Statistics ¹	2006-2007
	Some college	American Community Survey	2005-2009
Employment	Unemployment	Bureau of Labor Statistics	2009
Income	Children in poverty	Small Area Income and Poverty Estimates, U.S. Census	2008
Family and Social Support	Inadequate social support	Behavioral Risk Factor Surveillance System	2005-2009
	Single-parent households	American Community Survey	2005-2009
Community Safety	Violent crime ²	Uniform Crime Reporting, Federal Bureau of Investigation	2006-2008
PHYSICAL ENVIRONMENT			
Air Quality ³	Air pollution-particulate matter days	U.S. Environmental Protection Agency / Centers for Disease Control and Prevention	2006
	Air pollution-ozone days	U.S. Environmental Protection Agency / Centers for Disease Control and Prevention	2006
Built Environment	Access to healthy foods	Census Zip Code Business Patterns	2008
	Access to recreational facilities	Census County Business Patterns	2008

¹ State data sources for KY, NH, NC, PA, SC, and UT (2008-2009).

² Homicide rate (2001-2007) from National Center for Health Statistics for AK, AZ, AR, CO, CT, GA, ID, IN, IA, KS, KY, LA, MN, MS, MT, NE, NH, NM, NC, ND, OH, SD, UT, and WV. State data source for IL.

³ Not available for AK and HI.

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County Health Rankings

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