County Health Rankings
Mobilizing Action Toward Community Health

2010
North Dakota

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 2010 *County Health Rankings*, a collection of 50 reports that reflect the overall health of counties in every state across the country. For the first time, 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 will allow them 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:
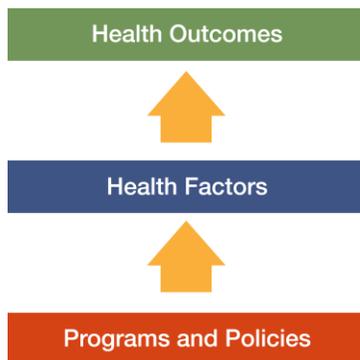
In this model, health outcomes are measures that describe the current health status of a county. These health outcomes are influenced by a set of health factors. These health factors and their outcomes may also be affected by community-based programs and policies designed to alter their distribution in the community. Counties can improve health outcomes by addressing all health factors with effective, evidence-based programs and policies.


Institute of Medicine, 2002

To compile the *Rankings*, we built on our prior work in Wisconsin, worked closely with staff from the Centers for Disease Control and Prevention and Dartmouth College, and obtained input from a team of expert advisors. 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 the choice of measures, see www.countyhealthrankings.org.

The Rankings

This report ranks North Dakota 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.
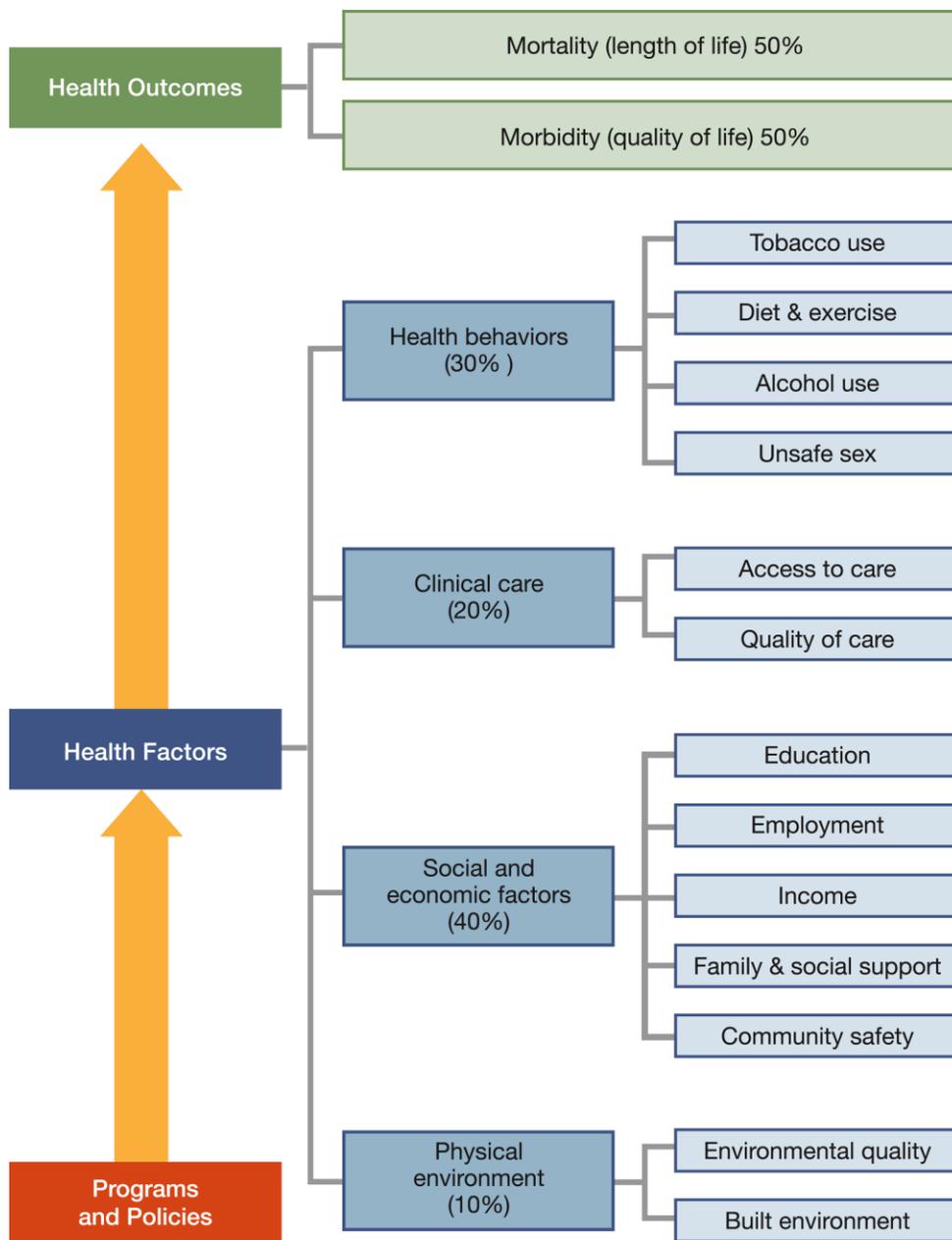
County Health Rankings model ©2010 UWPHI

The maps on this page display North Dakota'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

Rank 1-11   Rank 12-22   Rank 23-33   Rank 34-44   Not Ranked

HEALTH FACTORS

Rank 1-11   Rank 12-22   Rank 23-33   Rank 34-44   Not Ranked
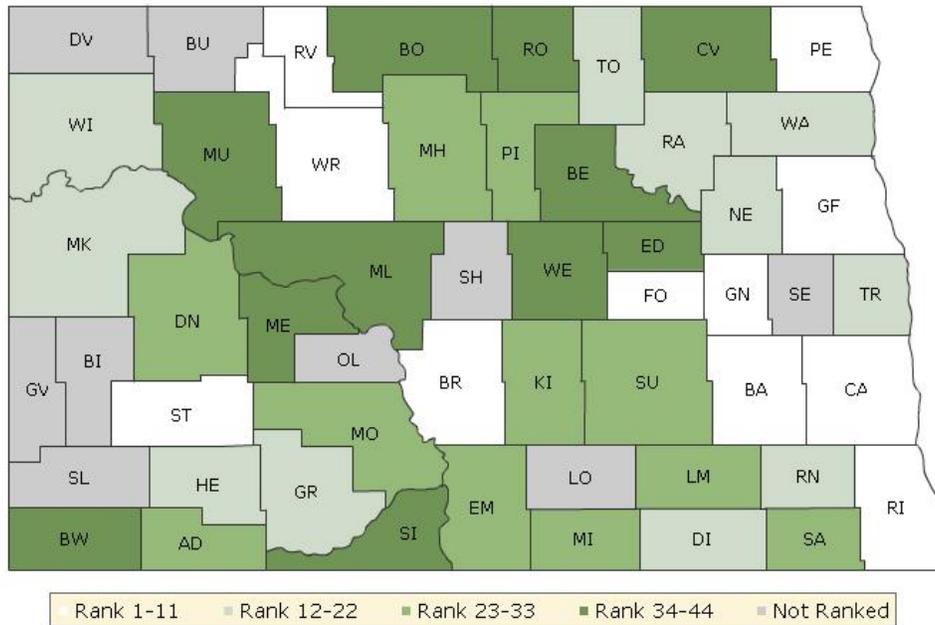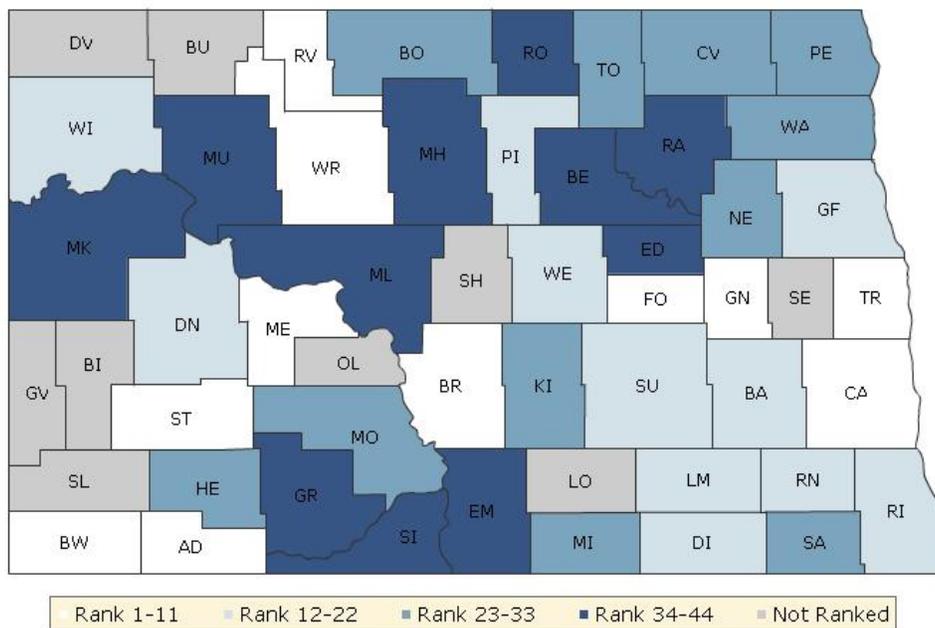
Summary Health Outcomes & Health Factors Rankings

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	Pembina	1	Burleigh
2	Griggs	2	Cass
3	Cass	3	Bowman
4	Grand Forks	4	Griggs
5	Barnes	5	Traill
6	Renville	6	Foster
7	Richland	7	Stark
8	Ward	8	Renville
9	Burleigh	9	Adams
10	Foster	10	Ward
11	Stark	11	Mercer
12	Walsh	12	Ransom
13	Ransom	13	Wells
14	Williams	14	Pierce
15	Nelson	15	Stutsman
16	Grant	16	Barnes
17	Towner	17	LaMoure
18	Hettinger	18	Grand Forks
19	Ramsey	19	Dunn
20	McKenzie	20	Richland
21	Traill	21	Dickey
22	Dickey	22	Williams
23	Morton	23	Morton
24	McIntosh	24	Cavalier
25	Stutsman	25	Kidder
26	LaMoure	26	Towner
27	Dunn	27	Bottineau
28	Kidder	28	Sargent
29	Sargent	29	Walsh
30	McHenry	30	Hettinger
31	Emmons	31	Nelson
32	Adams	32	Pembina
33	Pierce	33	McIntosh
34	Bowman	34	Eddy
35	Bottineau	35	McLean
36	McLean	36	Grant
37	Wells	37	McHenry
38	Cavalier	38	Emmons
39	Eddy	39	Ramsey
40	Mercer	40	McKenzie
41	Mountrail	41	Mountrail
42	Rolette	42	Benson
43	Benson	43	Sioux
44	Sioux	44	Rolette

Not Ranked: Billings, Burke, Divide, Golden Valley, Logan, Oliver, Sheridan, Slope, Steele

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	Rank	Morbidity
1	Burleigh	1	Griggs
2	Cass	2	Pembina
3	Stark	3	Renville
4	Grand Forks	4	Foster
5	Ward	5	McKenzie
6	Richland	6	Nelson
7	Williams	7	Barnes
8	Pembina	8	Grant
9	Ransom	9	Towner
10	Morton	10	Hettinger
11	Stutsman	11	Traill
12	Barnes	12	Dickey
13	Walsh	13	Walsh
14	Ramsey	14	Cass
15	McHenry	15	McIntosh
16	Adams	16	Grand Forks
16	Bottineau	17	Richland
16	Bowman	18	LaMoure
16	Cavalier	19	Ward
16	Dickey	20	Ramsey
16	Dunn	21	Dunn
16	Eddy	22	Ransom
16	Emmons	23	Kidder
16	Foster	24	Sargent
16	Grant	25	Williams
16	Griggs	26	Emmons
16	Hettinger	27	Adams
16	Kidder	28	McHenry
16	LaMoure	29	Stark
16	McIntosh	30	Morton
16	Mercer	31	Stutsman
16	Nelson	32	Pierce
16	Pierce	33	Burleigh
16	Renville	34	Bowman
16	Sargent	35	Bottineau
16	Towner	36	McLean
16	Traill	37	Wells
16	Wells	38	Cavalier
39	McLean	39	Mountrail
40	McKenzie	40	Eddy
41	Mountrail	41	Mercer
42	Rolette	42	Benson
43	Benson	43	Rolette
44	Sioux	44	Sioux

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	Wells	1	Cass	1	Bowman	1	Adams
2	Burleigh	2	Burleigh	2	Cass	1	Dickey
3	Bowman	3	Grand Forks	3	Burleigh	3	Morton
4	Adams	4	Traill	4	Renville	4	Kidder
5	Towner	5	Pierce	5	Stark	4	Pierce
6	Dickey	6	Barnes	6	Griggs	6	Rolette
7	McIntosh	7	Stutsman	7	Traill	7	Ransom
8	Dunn	8	Ramsey	8	Grand Forks	8	Bowman
9	Foster	9	Mercer	9	Williams	9	Renville
10	Griggs	10	Ward	10	Ward	9	Wells
11	Emmons	11	Stark	11	Foster	11	Grant
12	Pierce	12	Foster	12	Ransom	12	Hettinger
13	Traill	13	Williams	13	Stutsman	13	Emmons
14	Renville	14	Richland	14	LaMoure	14	Walsh
15	Cass	15	Sioux	15	Barnes	15	Mercer
16	Kidder	16	Ransom	16	Richland	16	Benson
17	LaMoure	17	Morton	17	Mercer	17	McIntosh
18	Grant	18	Sargent	18	Adams	18	Ward
19	Mercer	19	Wells	19	Bottineau	19	Burleigh
20	Stark	20	Walsh	20	Cavalier	20	Mountrail
21	Ransom	21	Griggs	21	Dunn	21	Bottineau
22	Barnes	22	LaMoure	22	Morton	22	Pembina
23	Ward	23	Adams	23	Nelson	23	Eddy
24	Bottineau	24	Dunn	24	Towner	24	Griggs
25	Pembina	25	McLean	25	Hettinger	25	Cass
26	Cavalier	26	Nelson	26	Sargent	26	LaMoure
27	Eddy	27	Cavalier	27	McKenzie	27	McHenry
28	Walsh	28	Bowman	28	Wells	28	Richland
29	Stutsman	29	Kidder	29	Dickey	29	Foster
30	Richland	30	Eddy	30	Pembina	30	Cavalier
31	McHenry	31	Dickey	31	McLean	31	Nelson
32	Hettinger	32	McHenry	32	Pierce	32	Williams
33	Sargent	33	Mountrail	33	Walsh	33	Stark
34	McLean	34	Renville	34	Kidder	34	Stutsman
35	Nelson	35	Pembina	35	Ramsey	35	Barnes
36	Grand Forks	36	Hettinger	36	Eddy	36	Dunn
37	Morton	37	Benson	37	McIntosh	37	McLean
38	Williams	38	Bottineau	38	McHenry	38	Sargent
39	Ramsey	39	Towner	39	Grant	39	Ramsey
40	McKenzie	40	McIntosh	40	Emmons	40	Sioux
41	Mountrail	41	McKenzie	41	Mountrail	41	McKenzie
42	Benson	42	Emmons	42	Benson	42	Towner
43	Sioux	43	Grant	43	Sioux	43	Traill
44	Rolette	44	Rolette	44	Rolette	44	Grand Forks

2010 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	2004-2006
Morbidity	Poor or fair health	Behavioral Risk Factor Surveillance System	2002-2008
	Poor physical health days	Behavioral Risk Factor Surveillance System	2002-2008
	Poor mental health days	Behavioral Risk Factor Surveillance System	2002-2008
	Low birthweight	National Center for Health Statistics	2000-2006
HEALTH FACTORS			
HEALTH BEHAVIORS			
Tobacco	Adult smoking	Behavioral Risk Factor Surveillance System	2002-2008
Diet and Exercise	Adult obesity	National Center for Chronic Disease Prevention and Health Promotion	2006-2008
Alcohol Use	Binge drinking	Behavioral Risk Factor Surveillance System	2002-2008
	Motor vehicle crash death rate	National Center for Health Statistics	2000-2006
High Risk Sexual Behavior	Chlamydia rate	National Center for Health Statistics	2007
	Teen birth rate	National Center for Health Statistics	2000-2006
CLINICAL CARE			
Access to Care	Uninsured adults	Small Area Health Insurance Estimates, U.S. Census	2005
	Primary care provider rate	Health Resources & Services Administration	2006
Quality of Care	Preventable hospital stays	Medicare/Dartmouth Institute	2005-2006
	Diabetic screening	Medicare/Dartmouth Institute	2003-2006
	Hospice use	Medicare/Dartmouth Institute	2001-2005
SOCIOECONOMIC FACTORS			
Education	High school graduation	National Center for Education Statistics[1]	2005-2006
	College degrees	U.S. Census/American Community Survey	2000/2005-2007
Employment	Unemployment	Bureau of Labor Statistics	2008
Income	Children in poverty	Small Area Income and Poverty Estimates, U.S. Census	2007
	Income inequality	U.S. Census/American Community Survey[2]	2000/2005-2007
Family and Social Support	Inadequate social support	Behavioral Risk Factor Surveillance System	2005-2008
	Single-parent households	U.S. Census/American Community Survey	2000/2005-2007
Community Safety	Violent crime[3]	Uniform Crime Reporting, Federal Bureau of Investigation	2005-2007
PHYSICAL ENVIRONMENT			
Air Quality[4]	Air pollution-particulate matter days	U.S. Environmental Protection Agency / Centers for Disease Control and Prevention	2005
	Air pollution-ozone days	U.S. Environmental Protection Agency / Centers for Disease Control and Prevention	2005
Built Environment	Access to healthy foods	Census Zip Code Business Patterns	2006
	Liquor store density	Census County Business Patterns	2006

[1] State data sources for KY, NH, NC, PA, SC, and UT (2007-2008).

[2] Income inequality estimates for 2000 were calculated by Mark L. Burkey, North Carolina Agricultural & Technical State University, www.ncat.edu/~burkeym/Gini.htm.

[3] Homicide rate (2000-2006) 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.

[4] Not available for AK and HI.

CREDITS

Report Editors
University of Wisconsin-Madison
School of Medicine and Public Health
Population Health Institute
Bridget Booske, PhD, MHSA
Jessica Athens, MS
Patrick Remington, MD, MPH

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

Conceptual Development
David Kindig, MD, PhD
Paul Peppard, PhD
Patrick Remington, MD, MPH

Technical Advisors
Amy Bernstein, ScD, Centers for Disease Control and Prevention
Michele Bohm, MPH, Centers for Disease Control and Prevention
Vickie Boothe, MPH, Centers for Disease Control and Prevention
Ethan Burke, MD, MPH, Dartmouth Institute for Health Policy and Clinical Practice

Research Assistance
Clare O'Connor
Karen Odegaard
Hyojun Park
Matthew Rodock

Production and Editing
Chuck Alexander
Alex Field
Joan Fischer
Irene Golembiewski
Jennifer Robinson

Design
Forum One, Alexandria, VA
Media Solutions, UW School of Medicine and Public Health

Metrics Advisory Group
Yukiko Asada, PhD, Associate Professor, Community Health and Epidemiology, Dalhousie University, Halifax, Nova Scotia
Tom Eckstein, MBA, Principal, Arundel Street Consulting Inc, St. Paul, MN
Elliott Fisher, MD, MPH, Director, Center for Population Health, Dartmouth Institute for Health Policy and Clinical Practice, and
   Professor of Medicine and Community and Family Medicine, Dartmouth Medical School, Lebanon, NH
Howard Frumkin, MD, MPH, Dr. PH, Director of the National Center for Environmental Health, ATSDR, CDC, Atlanta, GA
Thomas Kottke, MD, MSPH, Medical Director for Evidence-Based Health, HealthPartners, Minneapolis, MN
Ali Mokdad, PhD, Professor of Global Health, Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA
Roy Gibson Parrish, MD, Consultant in Population Health Information Systems, Peacham, VT
Robert M. (Bobby) Pestronk, MPH, Executive Director, National Association of County and City Health Officials (NACCHO),
   Washington, DC
Tom Ricketts, PhD, Professor of Health Policy and Administration, University of North Carolina
Steven Teutsch, MD, MPH, Chief Science Officer, Los Angeles County Public Health, Los Angeles, CA
Julie Willems Van Dijk, PhD, RN, former Marathon County, WI Health Officer

Suggested citation: University of Wisconsin Population Health Institute. *County Health Rankings 2010.*

County Health Rankings
Mobilizing Action Toward Community Health

countyhealthrankings.org