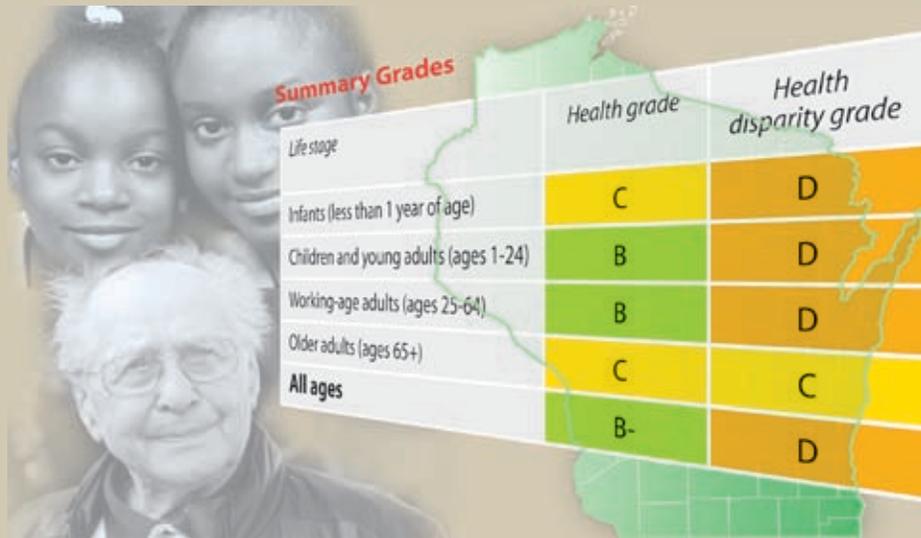


# Health of Wisconsin



## REPORT CARD

July 2007



University of Wisconsin  
**SCHOOL OF MEDICINE  
AND PUBLIC HEALTH**

University of Wisconsin Population Health Institute  
Department of Population Health Sciences

# Table of Contents

Foreword _____	1
Overview of the Report Card _____	2
Wisconsin’s Report Card for Infant Health _____	4
Wisconsin’s Report Card for Child and Young Adult Health _____	6
Wisconsin’s Report Card for Working-Age Adult Health _____	8
Wisconsin’s Report Card for Older Adult Health _____	10
Data Sources and Methods _____	12

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# Foreword

July 2007

As part of its mission to translate research into policy and practice, the University of Wisconsin Population Health Institute has prepared the *Health of Wisconsin Report Card* to provide the citizens of Wisconsin with an assessment of the health of the state. This Report Card assesses our progress towards meeting two of the three overarching goals of the *Healthiest Wisconsin 2010* State Health Plan to

- 1) protect and promote the health for all and
- 2) eliminate health disparities.

Unfortunately, Wisconsin is not moving forward as quickly as other states in improving its health. Furthermore, as a state, Wisconsin is failing to promote the health of several of our most vulnerable groups. The *Health of Wisconsin Report Card* draws our attention to weaknesses of the state in promoting the health of **all** of its residents.

Researchers at the Population Health Institute, within the University of Wisconsin School of Medicine and Public Health, and across the state continue to work on identifying the most effective ways to improve our health. One fact that has become clear is that good health for all is a result of many factors.

This Report Card provides a clear and strong signal to all of us that we have a lot to do in order to become a healthier state. While access to high quality health care is key to improving health, health care alone is not sufficient for obtaining optimal improvement in everyone's health. Together, we must work to improve our own health-related behaviors, to increase the level of education and income for our most vulnerable citizens, and to improve the social and physical environment within Wisconsin.

I look forward to the next *Health of Wisconsin Report Card* which will identify a set of programs and policies that, if adopted and implemented, will help us promote health for all and eliminate health disparities in Wisconsin.



Robert N. Golden, MD

Dean, UW School of Medicine and Public Health  
Vice Chancellor for Medical Affairs

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## Overview of the Report Card

A major goal of the Wisconsin Partnership Program at the University of Wisconsin School of Medicine and Public Health is to help Wisconsin become the healthiest state in the nation with less disparity. However, findings from *America's Health Rankings* and our own internal analysis suggest that while Wisconsin is becoming healthier over time, we are losing ground in comparison to the health of other states.

According to *America's Health Rankings'* comparison of the health of the 50 states based on a number of key factors, Wisconsin ranked 6th "healthiest" in 1990, peaked at 4th in 1997, but has fallen to 10th in the latest 2006 rankings. Furthermore, our analysis of one measure of health (age-adjusted mortality rates) shows that our rank has slipped from 11 to 14 over the past 10 years and, if current trends continue, will fall to 18 in another 10 years.

To increase our understanding of the health of Wisconsin and, in particular, differences in health among our population, we have developed this *Health of Wisconsin Report Card*. We examine our population health outcomes and give the State grades on our health and health disparity.

The image on the front cover gives grades for four life stages, and two overall grades for all ages for the health of Wisconsin: a B- for overall *health* and a D for *health disparities*. What do these grades represent and how did we determine them?

### Grading Health

Our grade for *health* is based on two ways of measuring health:

- 1) length of life and
- 2) quality of life.

We measure length of life by examining the number of deaths relative to the size of the population in each age group: this measure is known as the death or mortality rate. We examined mortality rates for four distinct age groups: infants (less than 1 year old), children and young adults (ages 1-24), working-age adults (ages 25-64), and older adults (ages 65 and over).

Measuring health-related quality of life is clearly more difficult than simply counting how many people die. But researchers have found that by asking people how healthy they feel you can learn a lot. Not only can you learn how they feel right now but you can also get a good indication of their future health. Across the country, people are surveyed and asked how many days in the past month they have felt physically or mentally unhealthy. When their responses are combined, researchers can calculate the average number of unhealthy days per month for different groups of people. We looked at unhealthy days among the two adult age groups (working-age adults and older adults), because these data are not available for infants and children.

We averaged grades for our two measures of health across the four life stages to determine an overall grade for health. When we grade the *health* (length and quality of life) of Wisconsin's population in comparison to the health of the population of other states, Wisconsin gets a B-. But, this average grade is dominated by the health of the majority population. Reporting just an average grade for the state ignores the fact that the state is failing in terms of the health of several of its subgroups.

### Grading Health Disparities

In addition, we developed a *health disparity* grade based on the health of different groups of people. To do this, we examined the health of subgroups of the population within each life stage based on four characteristics:

**Gender                      Geography                      Socioeconomic Status                      Race/Ethnicity**

Data on health by gender and geography are readily available but data on socioeconomic status, such as income, and race and ethnicity are not always available or reliable. So, we chose education as our measure of socioeconomic status and we reported on health for as many racial and ethnic subgroups as possible where the data were sufficiently reliable. Racial/ethnic subgroups where data were not reliable were given an I for incomplete data. We chose county-level urbanization, or the degree of urban (city-like) character of the county in which one lives, as our measure of geography. For each life stage, we graded the health of each Wisconsin subgroup in comparison to the health of the total population in that age group in other states.

To measure the disparity among subgroups within each life stage, we compared the health grade of each Wisconsin subgroup to the grade of the healthiest subgroup of the same age in Wisconsin. We used these comparisons to calculate disparity scores and grades for mortality and health-related quality of life. We averaged the disparity grades for the four life stages to determine an overall grade for health disparity. Taking account of the differences in health between subgroups, Wisconsin gets a D for *health disparity*.

### Summary Grades

We compile these grades for *health* and *health disparity* for each life stage and display them in a summary table below. Detailed report cards for each of the four life stages appear on pages 4-11 and more detailed information on our data sources and methods is provided on pages 12-13.

<i>Life stage</i>	<i>Health grade</i>	<i>Health disparity grade</i>
Infants (less than 1 year of age)	C	D
Children and young adults (ages 1-24)	B	D
Working-age adults (ages 25-64)	B	D
Older adults (ages 65+)	C	C
<b>All ages</b>	B-	D

### Improving These Grades

These grades do not have value in themselves, but must be a guide to improvement. Hopefully this Report Card will stimulate discussion about how we can be healthier overall and reduce the disparities displayed here. During the coming year, the Healthiest State Project will examine the determinants of better health and less disparity, by looking at what programs and policies have been shown to be most effective in states with better grades than Wisconsin. “Improving Wisconsin’s Health” will be the topic of our next Healthiest State Report in 2008.

# Wisconsin's Report Card for Infant Health



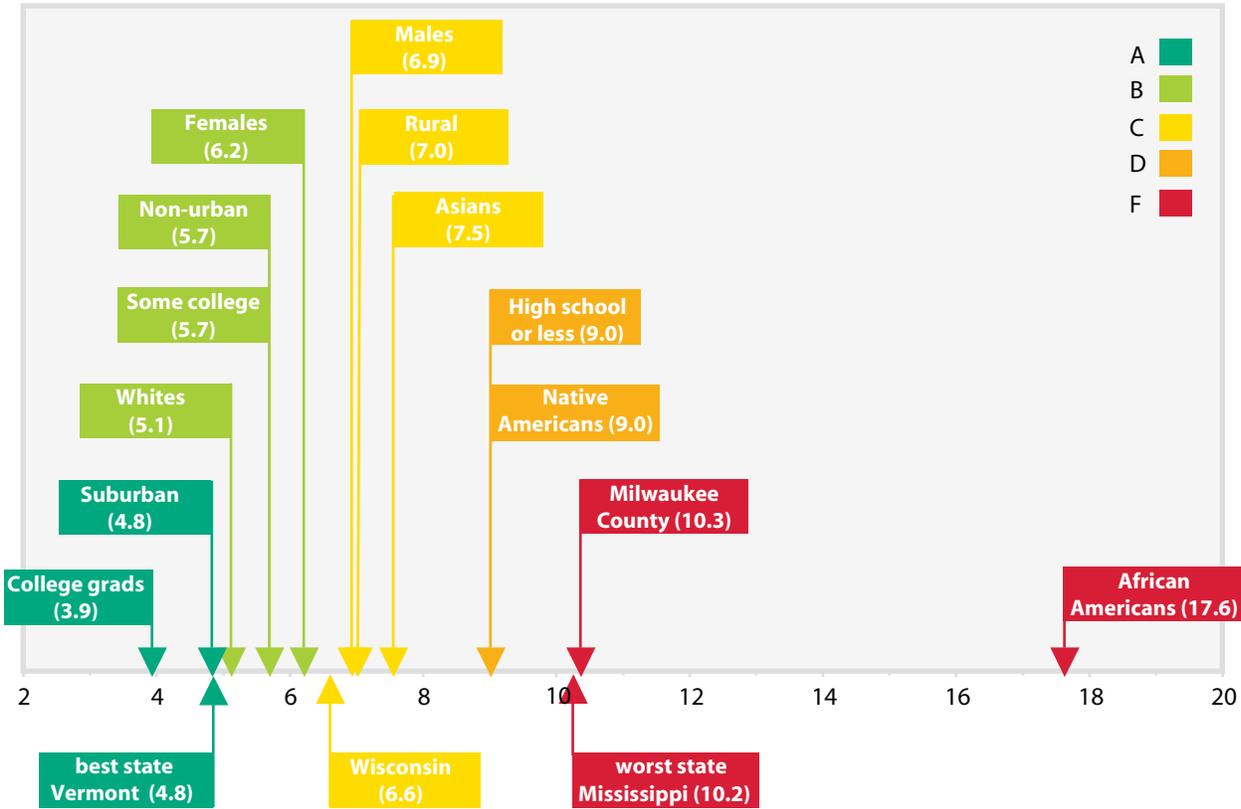
		Percent of Population	Mortality Rate (Per 1000)	Grades			
<i>Infants (&lt; 1 year)</i>		100%	6.6			C	
Gender	Male	51%	6.9			C	
	Female	49%	6.2		B		
Education of mother	High school or less	45%	9.0				D
	Some college/technical school	24%	5.7		B		
	College graduate	31%	3.9	A			
Type of county	Large urban (Milwaukee County)	21%	10.3				F
	Suburban/urban	31%	4.8	A			
	Non-urban	36%	5.7		B		
	Rural	12%	7.0			C	
Race/ethnicity	African American/Black	9%	17.6				F
	Asian	3%	7.5			C	
	Hispanic/Latino	8%	1				
	Native American	1%	9.0				D
	White non-Hispanic	78%	5.1		B		

Health Grade **C**

Health Disparity Grade **D**

## Infant Health (Less than 1 year of age)

Wisconsin Infant Mortality Rates  
(Ages <1, rates per 1,000 population)



- Overall, Wisconsin receives a grade of C for infant health and ranks 23rd in comparison to other states.
- Wisconsin receives a D for infant health disparity and ranks 28th in comparison to other states.
- Wisconsin has failed to adequately promote health for infants who live in Milwaukee County and African American infants.
- Wisconsin receives a barely passing grade of D for its efforts to promote the health of Native American infants and infants whose mothers have no more than a high school diploma.

# Wisconsin's Report Card for Child and Young Adult Health



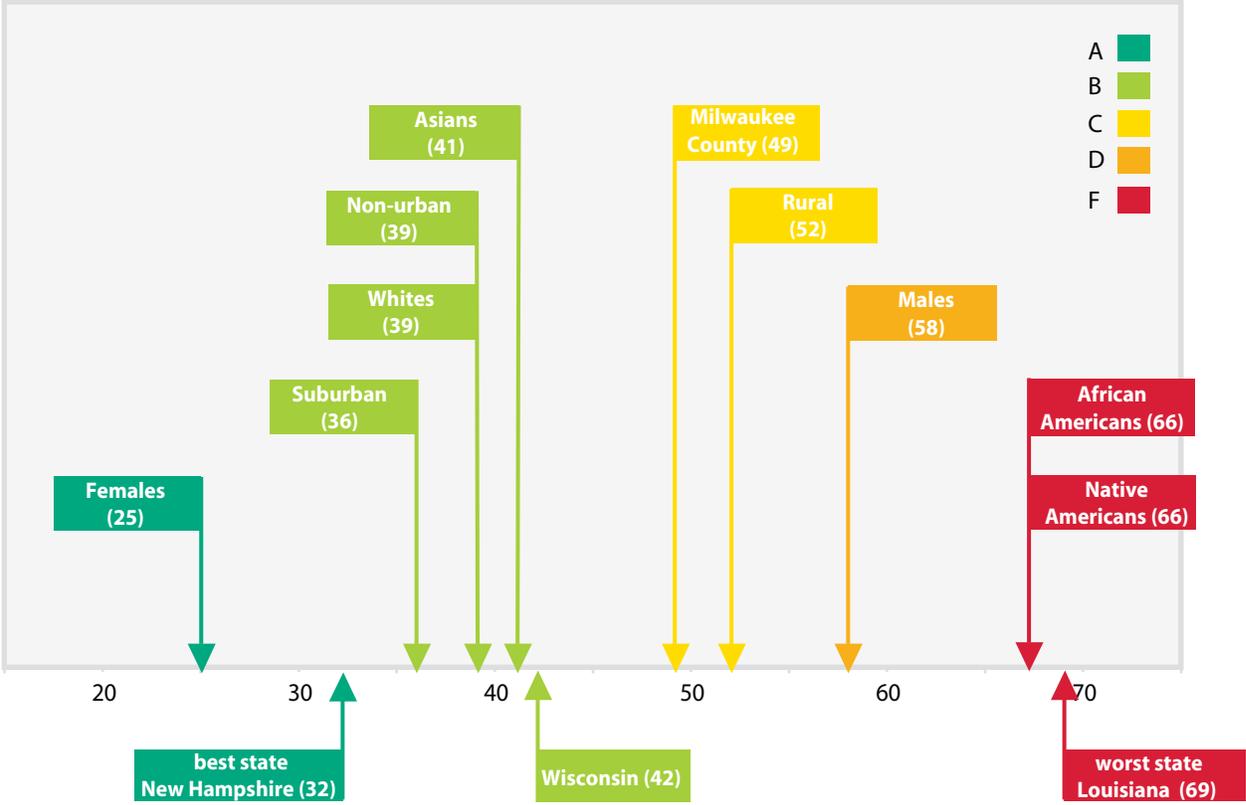
		Percent of Population	Mortality Rate (Per 100000)	Grades			
<b>Children and Young Adults (1-24)</b>		100%	42		<b>B</b>		
Gender	Male	51%	58				<b>D</b>
	Female	49%	25	<b>A</b>			
Type of county	Large urban (Milwaukee County)	18%	49			<b>C</b>	
	Suburban/urban	31%	36		<b>B</b>		
	Non-urban	38%	39		<b>B</b>		
	Rural	13%	52			<b>C</b>	
Race/ethnicity	African American/Black	9%	66				<b>F</b>
	Asian	3%	41		<b>B</b>		
	Hispanic/Latino	6%	1				
	Native American	1%	66				<b>F</b>
	White non-Hispanic	81%	39		<b>B</b>		

Health Grade **B**

Health Disparity Grade **D**

## Child and Young Adult Health (Ages 1 through 24)

Wisconsin Child and Young Adult Mortality Rates  
(Ages 1-24, rates per 100,000 population)



- Overall, Wisconsin receives a grade of B for child and young adult health and ranks 15th in comparison to other states.
- Wisconsin receives a D for child and young adult health disparities and ranks 23rd in comparison to other states.
- Wisconsin has failed to adequately promote health for children and young adults who are African American or Native American.
- Wisconsin receives a barely passing grade of D for its efforts to promote health for male children and young adults.

## Wisconsin's Report Card for Working-Age Adult Health

Mortality Rate		Percent of Population	Mortality Rate (Per 100000)	Grades			
<b>Working-Age Adults (25-64)</b>		100%	296		B		
Gender	Men	50%	367			C	
	Women	50%	225	A			
Education	High school or less	44%	459				F
	Some college/technical school	31%	212	A			
	College graduate	25%	188	A			
Type of county	Large urban (Milwaukee County)	17%	424				D
	Suburban/urban	32%	247	A			
	Non-urban	37%	275		B		
	Rural	14%	319		B		
Race/ethnicity	African American/Black	5%	624				F
	Asian	2%	170	A			
	Hispanic/Latino	4%	1				
	Native American	1%	592				F
	White non-Hispanic	88%	279		B		

Unhealthy Days		Percent of Population	Unhealthy Days	Grades			
<b>Working-Age Adults (25-64)</b>		100%	5.3		B		
Gender	Men	50%	4.5	A			
	Women	50%	6.2				D
Education	High school or less	44%	6.2			C	
	Some college/technical school	31%	5.7			C	
	College graduate	25%	4.1	A			
Type of county	Large urban (Milwaukee County)	17%	6.1			C	
	Suburban/urban	32%	5.0		B		
	Non-urban	37%	5.2		B		
	Rural	14%	5.4		B		
Race/ethnicity	African American/Black	5%	8.4				F
	Asian	2%	1				
	Hispanic/Latino	4%	8.0				F
	Native American	1%	1				
	White non-Hispanic	88%	5.1		B		

Health Grade

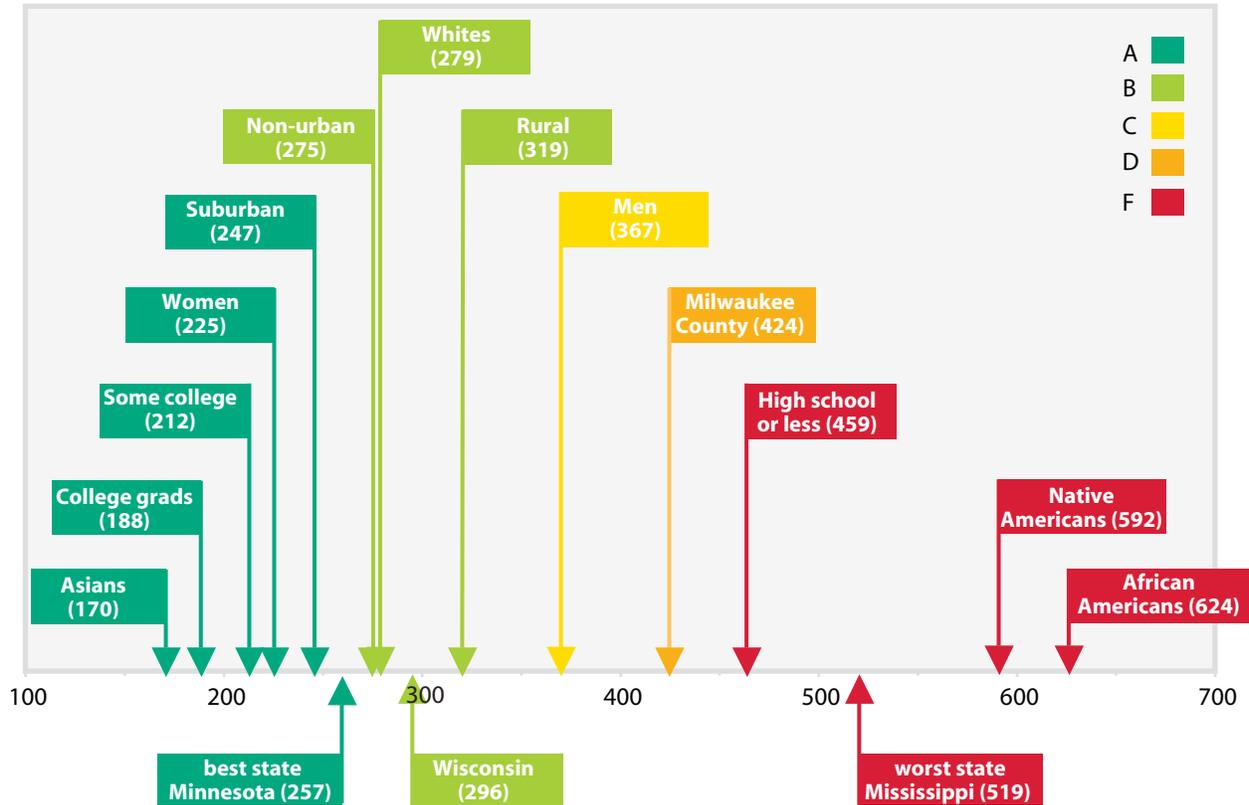
**B**

Health Disparity Grade

**D**

## Working-Age Adult Health (Ages 25 through 64)

Wisconsin Working-Age Adult Mortality Rates  
(Ages 25-64, rates per 100,000 population)



- Overall, Wisconsin receives a grade of B for the health of working-age adults and ranks 7th in comparison to other states.
- Wisconsin receives a grade of D for health disparities among working-age adults and ranks 14th in comparison to other states.
- Wisconsin has failed to reduce mortality among working-age adults who have a high school diploma or less, are African American, or are Native American. Wisconsin is also failing in its efforts to improve health-related quality of life for African American and Hispanic or Latino working-age adults.
- Wisconsin receives a barely passing grade of D for its efforts to reduce mortality among working-age adults who live in Milwaukee County or to promote health-related quality of life for women.

## Wisconsin's Report Card for Older Adult Health

Mortality Rate		Percent of Population	Mortality Rate (Per 100000)	Grades			
<b>Older Adults (65+)</b>		100%	4720			C	
Gender	Men	42%	5732				F
	Women	58%	4049	A			
Education	High school or less	72%	5579				F
	Some college/technical school	16%	3855	A			
	College graduate	13%	4078	A			
Type of county	Large urban (Milwaukee County)	16%	5146				D
	Suburban/urban	27%	4651		B		
	Non-urban	38%	4588		B		
	Rural	19%	4732			C	
Race/ethnicity	African American/Black	3%	5060			C	
	Asian	1%	3050	A			
	Hispanic/Latino	1%	I				
	Native American	<1%	5154				D
	White non-Hispanic	95%	4701		B		

Unhealthy Days		Percent of Population	Unhealthy Days	Grades			
<b>Older Adults (65+)</b>		100%	6.8			C	
Gender	Men	42%	5.9		B		
	Women	58%	7.4				D
Education	High school or less	72%	7.0			C	
	Some college/technical school	16%	7.2				D
	College graduate	13%	5.6		B		
Type of county	Large urban (Milwaukee County)	16%	8.1				F
	Suburban/urban	27%	6.2		B		
	Non-urban	38%	6.6			C	
	Rural	19%	6.7			C	
Race/ethnicity	African American/Black	3%	10.4				F
	Hispanic/Latino	1%	I				
	Native American	<1%	I				
	Other (includes Asian)	1%	I				
	White non-Hispanic	95%	6.7			C	

Health Grade

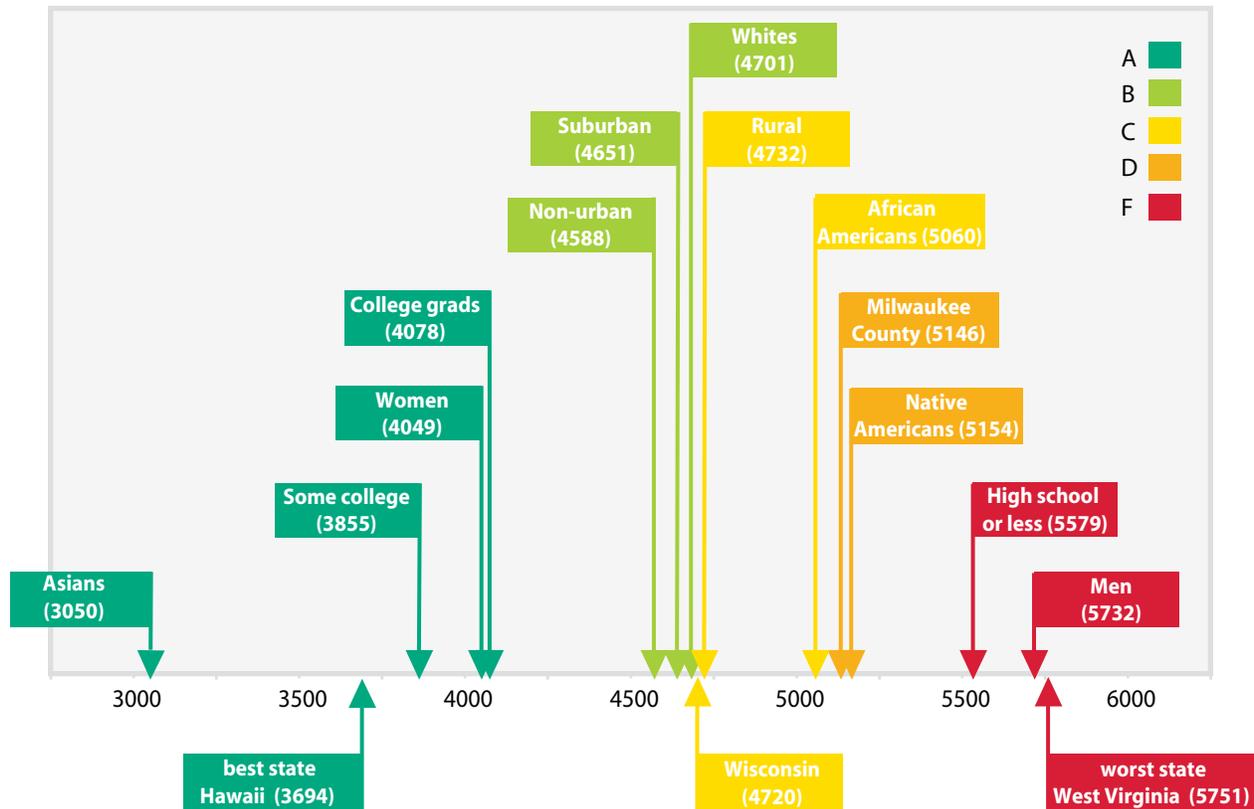
C

Health Disparity Grade

C

## Older Adult Health (Ages 65+)

Wisconsin Older Adult Mortality Rates (Ages 65+, rates per 100,000 population)



- Overall, Wisconsin receives a grade of C for the health of older adults and ranks 28th in comparison to other states.
- Wisconsin receives a grade of C for health disparities among older adults and ranks 12th in comparison to other states.
- Wisconsin has failed to reduce mortality for older male adults or older adults who have no education past high school. The state is also failing to promote health-related quality of life for older adults who live in Milwaukee County and for older African Americans.
- Wisconsin receives a barely passing grade of D for its efforts reduce mortality for older adults who live in Milwaukee County or are Native American. Wisconsin also receives a D for its efforts to promote health-related quality of life for older females and older adults with some college or technical school education.

## Data Sources and Methods

### What are mortality rates?

Mortality rates are based on counts of the number of deaths occurring in a population group divided by the total number of people in that group. These numbers are then converted to reflect rates of death per 100,000 people (per 1,000 births for infants). We report rates based on the most recent 3-year period for which data are available nationally: 2002-2004 (except for education of infants' mothers, 2000-2002). The mortality rates are adjusted for age (except the rates for infants and older adults by education).

### What are unhealthy days?

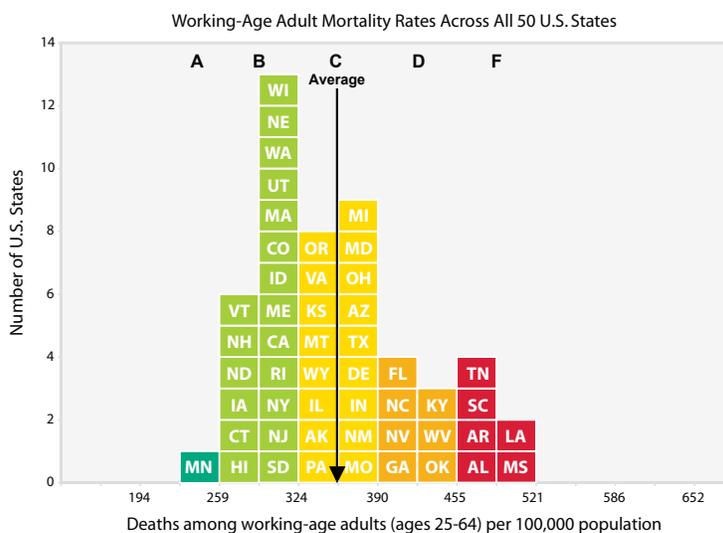
Unhealthy days are a measure of health-related quality of life. We report the mean (average) number of unhealthy days reported per month. The numbers are based on adult (age 25+) respondents' answers to two questions about their health in the past month:

- 1) how many days was your physical health poor?
- 2) how many days was your mental health poor?

We report data for the most recent 3-year period for which data on unhealthy days are available nationally: 2003-2005. The mean number of unhealthy days per month are adjusted for age.

### Grading methods

In order to give Wisconsin and its residents grades for the health outcomes of mortality and unhealthy days, we created grading scales. We looked at the distribution of health within each life stage for each of the 50 states to see how spread out each state's rate was from the average for the life stage (see figure below for an example for working-age adult mortality). We then assigned cutoff points for grades based on distance from the average (i.e., based on standard deviations from the mean). Rates that were closest to the average (between 0.5 standard deviations below the mean to 0.5 standard deviations above the mean) were assigned a C. Rates that were further away above and below the average were assigned a D (0.5 to 1.5 standard deviations above the mean) or a B (1.5 to 0.5 standard deviations below the mean) respectively. The highest (worst) rates were assigned Fs (more than 1.5 standard deviations above the mean) and the lowest (best) rates were assigned As (more than 1.5 standard deviations below the mean).



We determined a grading scale using this approach for each combination of outcome (mortality and unhealthy days) and life stage. The exact cutoff points for grades for each outcome/life stage combination are provided below. We used these outcome/life stage cutoff points to assign grades for each population subgroup.

## Life Stage Population Sizes and Outcome-specific Cutoff Points for Grades

Age group	2005 WI Population (%)	Outcome	A	B	C	D	F
Infants	69,856 (1.3%)	Mortality	<5.0	5.0-6.3	6.3-7.7	7.7-9.1	>9.1
Children/ Young Adults	1,813,574 (32.5%)	Mortality	<31.9	31.9-42.3	42.3-52.7	52.7-63.1	>63.1
Working-Age Adults	2,970,814 (53.2%)	Mortality	<259	259-324	324-390	390-455	>455
		Unhealthy Days	<4.8	4.8-5.5	5.5-6.2	6.2-6.9	>6.9
Older Adults	727,595 (13.0%)	Mortality	<4278	4278-4710	4710-5142	5142-5574	>5574
		Unhealthy Days	<5.5	5.5-6.3	6.3-7.0	7.0-7.8	>7.8

Within the oldest two life stages, we averaged the outcome grades (mortality and unhealthy days) to determine the life stage health grade, giving each outcome equal weighting.

The life stage health disparity grades are based on a weighted proportion of subgroup grades that were less than the best grade achieved by any subgroup. To calculate life stage health disparity scores, we assigned a score of 4 for an A, 3 for a B, 2 for a C, 1 for a D, and 0 for an F to each subgroup's grade for mortality, and where applicable, unhealthy days. We then summed the differences between the best subgroup grade and each subgroup score, divided this sum by the number of subgroups minus one, and converted this score to a percent scale by dividing by four. The resulting disparity score can range from a value of zero percent disparity when all subgroups have the same grade to 100% disparity where one subgroup grade is an A and all other subgroup grades are Fs. (For the two younger life stages, the disparity score was based solely on available mortality rates for subgroups, whereas the disparity score for the two older life stages was based on an average of the scores for mortality and unhealthy days.) We assigned grades to these scores as follows:

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
(0-15%)	(15-30%)	(30-45%)	(45-60%)	(> 60%)
Very Good	Good	Fair	Poor	Failing

Health and health disparities grades were also calculated for every state in order to identify Wisconsin's comparative performance on these measures. For the health outcomes, mean state values were used to assign ranks. The average of the two outcomes ranks was used for working-age and older adults. Life stage health disparities ranks were based on the state disparity scores described above.

To determine Wisconsin's health grade, we averaged the four life stage health grades to calculate an overall GPA. We converted the overall GPA back to a grade using the following conversion: < 0.5 (F), 0.75-1.25 (D), 1.5 (C-), 1.75-2.25 (C), 2.5 (B-), 2.75-3.25 (B), 3.5 (A-), 3.75-4.0 (A). Wisconsin's health disparity grade was calculated in the same way, using the four life stage health disparity grades.

### Data Sources and References

- Behavioral Risk Factor Surveillance System – All unhealthy days data.
- Census 2000 – population denominators used to calculate the education mortality rates.
- National Mortality Datasets – death counts used to calculate the education mortality rates.
- Department of Health and Family Services Wisconsin Interactive Statistics on Health (WISH) – Wisconsin mortality rates by race/ethnicity.
- WONDER ([www.wonder.cdc.gov/mortSQL.html](http://www.wonder.cdc.gov/mortSQL.html)) – all other mortality rates (gender, type of county, state, education of mother).
- UnitedHealth Foundation *America's Health Rankings 2006*.
- National Center for Health Statistics 2006 Urban-Rural County Classifications - used as a basis for the "type of county" categories.

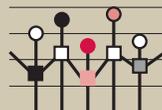


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