
Making Wisconsin the Healthiest State



2013 Wisconsin Health Trends: Progress Report

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and Public Health
UNIVERSITY OF WISCONSIN-MADISON

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Executive Summary

2013 Wisconsin Health Trends: Progress Report

Background

The Wisconsin State Health Plan for 2020 established a goal for everyone to live longer and better. Progress toward this goal can be measured by monitoring health outcomes, and the factors that contribute to those outcomes, for the state's population overall, as well as by considering the health status of specific populations within the state. Funded by a grant from the Wisconsin Partnership Program, this report assesses progress for 19 health indicators in Wisconsin by assessing trends over the past 10 years, and by determining whether current rates are better or worse than expected.

Two other related reports are useful in understanding the health of Wisconsin. The [*Opportunities to Make Wisconsin the Healthiest State*](#) report compares Wisconsin's health to the nation's and other states' health and the [*Health of Wisconsin Report Card*](#) examines disparities in health outcomes across specific subpopulations within Wisconsin. For information regarding policies and programs that have been used to address key health indicators, including whether these policies and programs have been shown to increase or decrease disparities in health outcomes, see the [online](#) or print version of [*What Works? Policies and Programs to Improve Wisconsin's Health*](#).

Approach

Ten-year trends for 19 leading health indicators were measured to see if the indicator improved or worsened over a 10-year period. The most current rates for each indicator were compared to the expected rate had the 10-year baseline trend continued.

In addition, where data were available, we report online both 10 year trends and current performance on these leading health indicators by gender, race and ethnicity, geography, and level of educational attainment.

Results

In the 2013 report, considering the population of the state in total, mortality trends for all age groups in Wisconsin improved. The greatest improvement was among children and young adults (ages 1-24). Other health outcomes are a cause for concern. The rate of low birthweight infants continues to increase. Additionally, an increasing percentage of adults report their health as fair or poor.

Improvements have been made in the health behavior areas of smoking, teen births and excessive drinking evidenced by their decreasing trends. However, the obesity trend continues to increase.

Although the most recent values for some socioeconomic and environmental indicators have improved, the trends are still worsening for all socioeconomic factors (high school drop-outs, unemployment, children in poverty and violent crime rate).

Summary

Wisconsin is making progress toward the 2020 goal of living longer. However, these data suggest that not everyone in the state is living better. If left unaddressed, many of the trends Wisconsin is experiencing--including increasing rates of adult obesity, low birthweight babies, and people who report their overall health to be fair or poor, along with worsening social and economic factors--will lead to poorer health outcomes and more disparities in the future. Current trends in health outcomes and health factors are markedly different for different subgroups within the state's population. Efforts to improve health in Wisconsin must consider the full array of factors that influence how long and how well we live, and must begin with analysis of the circumstances that may produce longer healthier lives for some, but not all, of the state's residents.

Overview of the *Wisconsin Health Trends: Progress Report*

The 2013 Wisconsin Health Trends: Progress Report provides a way to assess whether Wisconsin is achieving its goal for everyone to live longer and better ([Wisconsin State Health Plan: Healthiest Wisconsin 2020](#)).

How we measure health

The 19 health indicators are based on a model of population health that emphasizes that many factors, if improved, can make communities healthier places to live, learn, work and play. Measures of health outcomes and factors were chosen based on the *County Health Rankings* model (another research project of the University of Wisconsin Population Health Institute) which indicates that health behaviors, clinical care, socioeconomic factors and the physical environment all impact the length and quality of life. The measures included in this report are dynamic (meaning that the values have the potential to change annually) and are areas where targeted interventions can result in health improvement.

How progress is assessed

We calculated the annual percent change (APC) for each of the 19 health indicators during the past 10 years. An increasing annual percent change indicates a worsening health trend, while a decreasing annual percent change indicates an improving health trend.

- A  or  indicates Wisconsin **improved** on the health indicator during the past 10 years;
- A  indicates Wisconsin's performance on the health indicator has been **stable**; and
- A  or  indicates Wisconsin's performance **worsened** during the past 10 years.

Using these baseline trends, we determine what the “expected” current rate would be for each indicator if the past 10 year trend continued. We compare this expected rate to the current “observed” rate, to see if it is better or worse. Current progress is determined by calculating the percent difference between the observed and expected rates.

- A green circle () indicates that Wisconsin did better than expected for the health indicator;
- A yellow circle () indicates that Wisconsin did about the same as expected; and
- A red circle () indicates that Wisconsin did worse than expected for the health indicator.

The ***Wisconsin Health Trends: Progress Report*** is useful for public health professionals, policy makers, and concerned citizens who are interested in assessing long-term and recent trends in leading health indicators. Readers of the *Progress Report* may wish to use its findings to begin or expand efforts to improve Wisconsin's performance on one or more of these leading health indicators. To identify evidence-based strategies that promote health improvement, visit whatworksforhealth.wisc.edu. To find resources to develop an action plan that works for your community, please visit countyhealthrankings.org.

New analysis: Trends by population subgroups

In addition to the ***Wisconsin Health Trends: Progress Report***, information on health trends among specific subgroups is now accessible online at uwphi.pophealth.wisc.edu/programs/match/healthiest-state/progress-report/2013/disparity.htm. Where available, baseline trend and current year data are graphed for the 19 leading health indicators included in this report—the data are broken down by gender, race/ethnicity, geography, and education. These graphs reveal how disparities in health factors and health outcomes within the state have improved or worsened in the last ten years. An example of the disparity graphs can be found on page 6.

Wisconsin Health Trends: 2013 Progress Report

Health Outcomes

Current Rate (versus expected)				
Baseline Trend	Progress	Worse 	No Difference 	Better 
	Improved  	Premature death (< 75) rate All ages death rate 25-64 year old death rate 65+ year old death rate	1-24 year old death rate	Infant death rate
	No Change 			
	Worsened  	Self-reported health		Low birthweight

Health Factors

Current Rate (versus expected)				
Baseline Trend	Progress	Worse 	No Difference 	Better 
	Improved  	No health insurance (0-17)	Smoking	Excessive drinking Teen birth rate
	No Change 	No health insurance (18-64)		Air pollution
	Worsened  		Children in poverty	Obesity High school drop-outs Unemployment Violent crime rate

Baseline Trend Progress

	= APC* > +1.0%/year
	= +1.0%/year ≥ APC > +0.5%/year
	= +0.5%/year ≥ APC ≥ -0.5%/year
	= -0.5%/year > APC ≥ -1.0%/year
	= -1.0%/year > APC

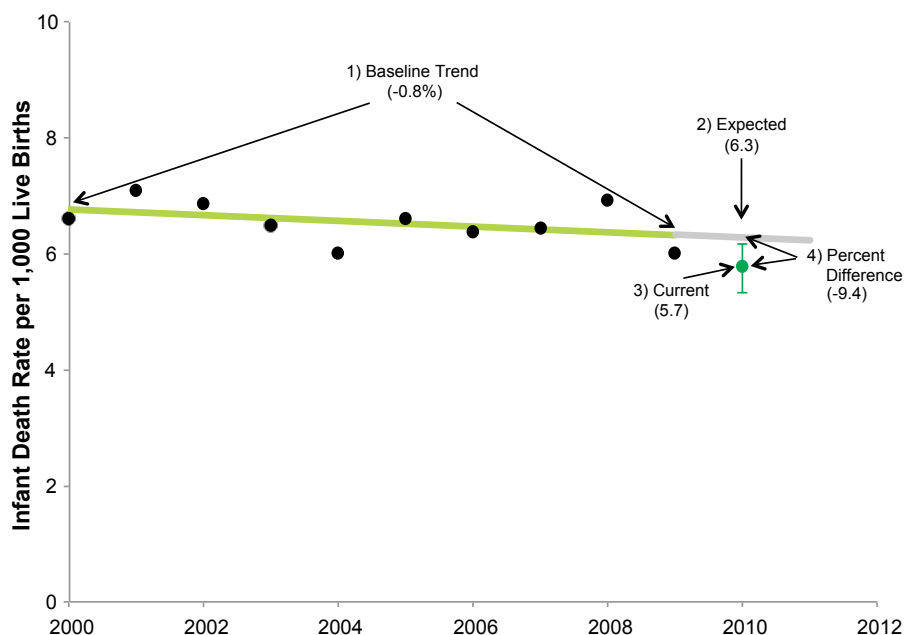
Current Progress

	= Current Rate is worse than expected rate (p<0.10)
	= Current rate is no different than expected rate
	= Current rate is better than expected rate (p<0.10)

*APC = Annual Percent Change

How to Interpret the Report

The *Wisconsin Health Trends: Progress Report* is useful for examining how the rates of specific health indicators have changed over the past year, compared to long term trends. Here is a guide to understanding the numbers and graphs provided in this report.



1. The known data points for the 10 years prior to the current year are graphed and a best fit linear regression is added to the graph. A decreasing line () indicates improvement: this example shows a reduction in infant deaths.
2. The line is extended in order to show the expected value if Wisconsin continued with the same trend as in the previous 10 years ().
3. The current observed value () is shown along with its 90% statistical confidence interval. Comparing this point to the expected trend line provides a comparison of how well Wisconsin is doing currently compared to what was expected.
4. The percent difference is calculated as:

$$\text{Percent Difference} = \frac{\text{observed value} - \text{expected value}}{\text{expected value}} \times 100$$

For the infant death rate example above, the baseline trend shows that infant mortality rates decreased 0.8% per year (i.e., an improving trend). This is good news for Wisconsin. The trend is improving and the current rate (2010, the most recent year of data available), is 9.4% less than expected (5.7 vs. 6.3). This indicates that Wisconsin performed better than expected, suggesting continued improvement in infant deaths moving forward.

2013 Health Progress Assessment

		CURRENT YEAR				10 YR. TREND	
		Current Observed Rate	Expected	Percent Difference	Current Progress	Baseline Trend (% change/year)	10-year Trend Progress
Health Outcomes	Premature death rate (YPLL-75 per 100,000)	5758	5558	+3.6	●	-1.3	↓
	Low birthweight (%)	7.0	7.2	-2.8	●	+0.9	↑
	Self-reported poor or fair health (%)	14.7	12.9	+13.6	●	+1.1	↑
	All ages death rate (per 100,000)	717	688	+4.2	●	-1.4	↓
	Infant death rate (per 1,000)	5.7	6.3	-9.4	●	-0.8	↓
	1-24 year old death rate (per 100,000)	33.3	32.6	+2.1	●	-2.8	↓
	25-64 year old death rate (per 100,000)	284	271	+4.6	●	-1.0	↓
	65+ year old death rate (per 100,000)	4350	4182	+4.0	●	-1.4	↓
Health Factors	Health Behaviors						
	Smoking (%)	18.2	18.0	+0.8	●	-2.5	↓
	Obesity (%)	27.0	28.9	-6.6	●	+3.2	↑
	Excessive drinking (%)	21.0	23.3	-10.1	●	-1.0	↓
	Teen birth rate (per 1,000)	26.5	29.2	-9.4	●	-1.5	↓
	Clinical Care						
	No health insurance (0-17) (%)	6.0	5.3	+12.2	●	-5.9	↓
	No health insurance (18-64) (%)	15.0	13.8	+8.3	●	+0.0	→
	Social and Economic Factors						
	High school drop-outs (%)	2.2	2.4	-8.3	●	+2.0	↑
Physical Environment	Unemployment (%)	6.9	8.0	-12.8	●	+5.5	↑
	Children in poverty (%)	18.4	18.1	+1.6	●	+5.1	↑
	Violent crime rate (per 100,000)	252	288	-12.6	●	+3.0	↑
	Air Pollution (µg/m ³)	10.0	11.0	-9.0	●	+0.2	→

Current Observed Rate = Rate or percentage provided for the most current year from the data sources

Expected = Value expected for the current year using a 10-year linear regression model for the previous ten years

Percent Difference = (Observed Value – Expected Value) / Expected Value *100

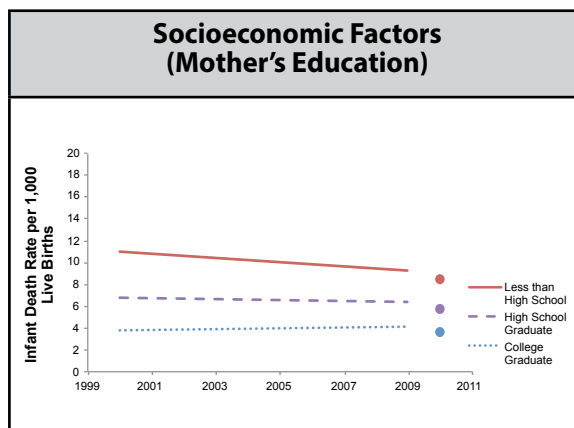
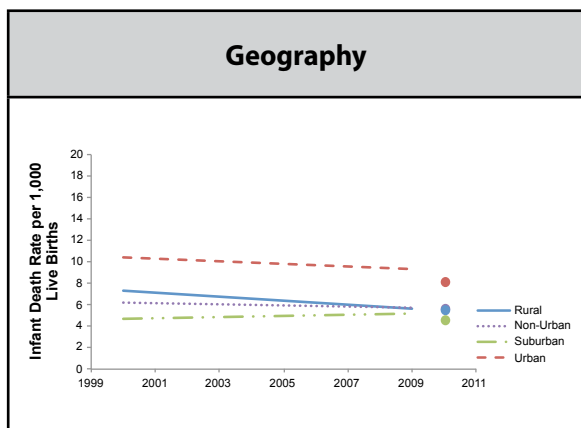
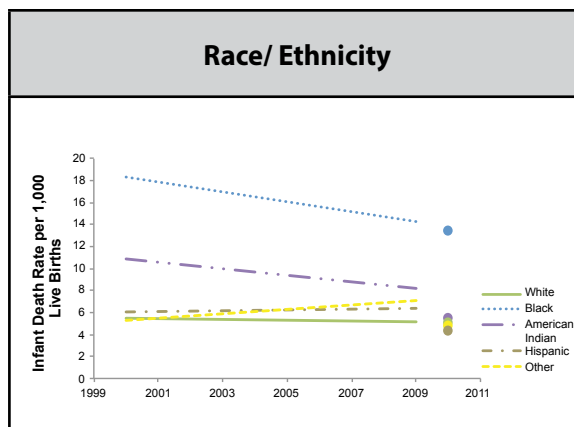
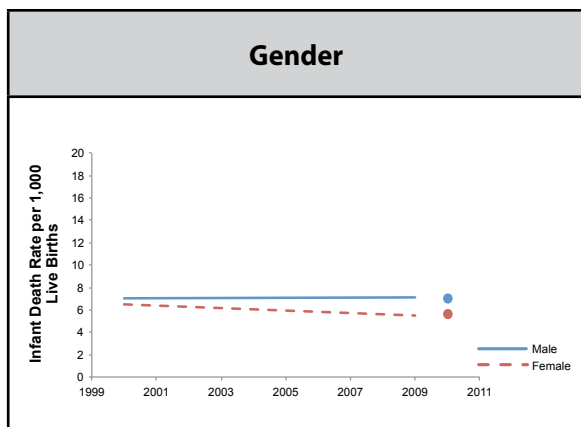
Current Progress = Based on the direction and significance of the percent difference value (see page 3 for cut off values)

Baseline Trend = $(e^b - 1) * 100$ where e=exponential function and b=slope of the logarithmic trend-line

10-Year Trend Progress = Based on magnitude of the baseline trend (see page 3 for cut-off values)

Health Disparity Trend Graphs

The complete set of health disparity trend graphs is available at uwphi.pophealth.wisc.edu/programs/match/healthiest-state/progress-report/2013/disparity.htm. Examples based on infant death rates are provided below.

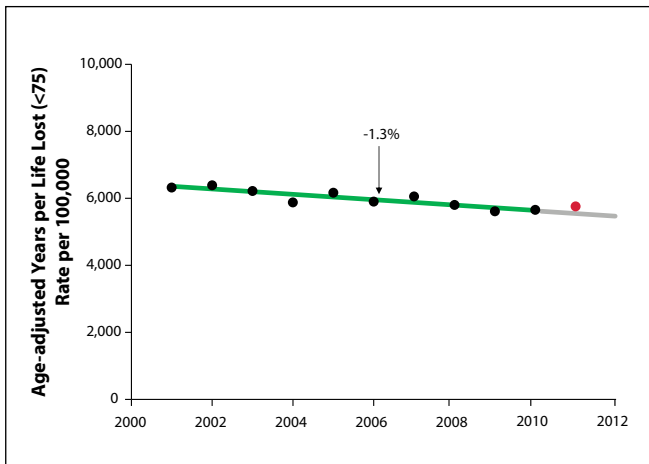


Although Wisconsin's infant death rate is improving, disparities by subgroup are apparent when the trend and current values are broken out by gender, race/ethnicity, geography, and socioeconomic level. The 10-year trend for infant deaths is worsening among males, those with mothers who have a college degree and suburban counties. Wisconsin has work to do in order to bring the infant death rate down to the level of the healthiest subgroup. For instance, although the African American infant death rate is improving, the trend line is between two and three times as high as the other racial and ethnic groups indicating cause for concern and room for focused interventions to reduce disparity.

Health Outcome Trends

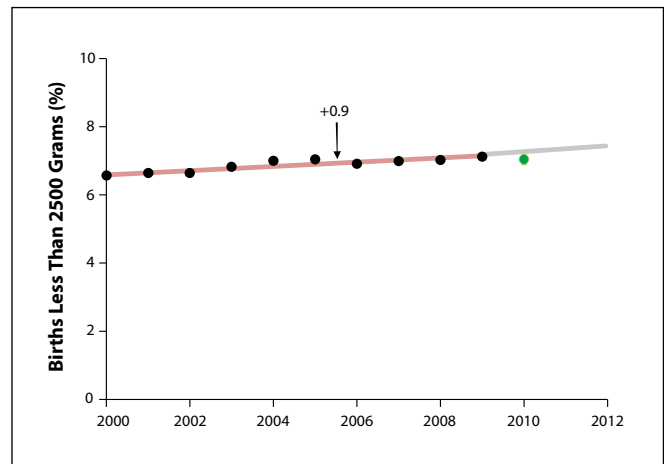
Premature Death

Baseline Trend = -1.3%/year Much Better ↓
 Current Rate (vs. expected) = +3.6% Worse ●



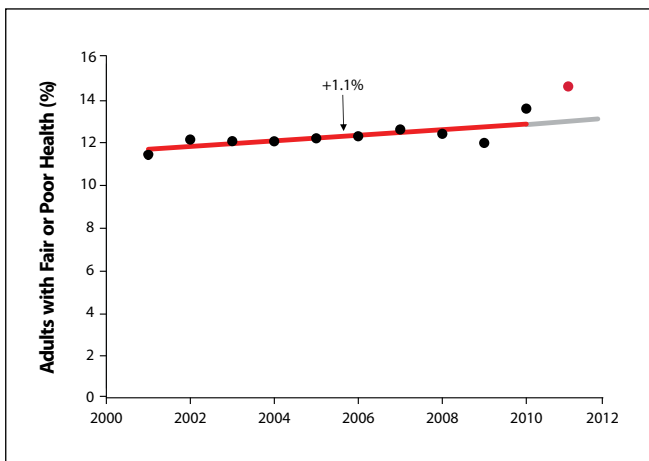
Low Birthweight

Baseline Trend = +0.9%/year Worse ↑
 Current Rate (vs. expected) = -2.8% Better ●



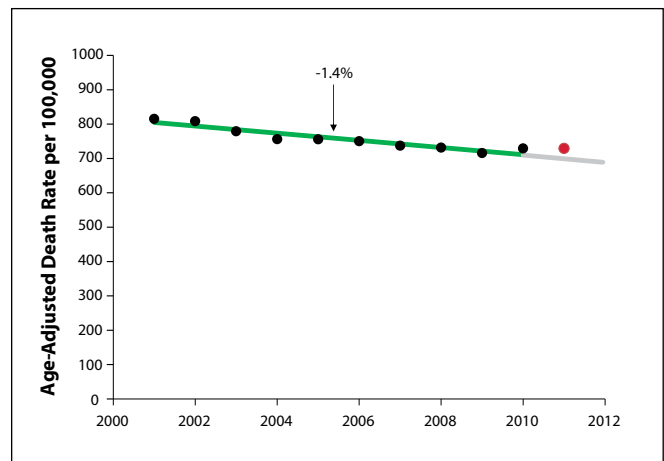
Self-Reported Health

Baseline Trend = +1.1%/year Much Worse ↑
 Current Rate (vs. expected) = +13.6% Worse ●



All Ages Death

Baseline Trend = -1.4%/year Much Better ↓
 Current Rate (vs. expected) = +4.2% Worse ●

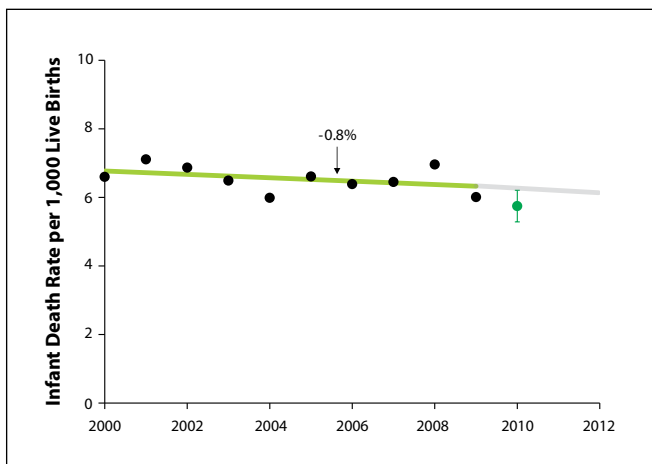


Health Outcome Trends *continued*

Infant Death

Baseline Trend = -0.8%/year Better ↓

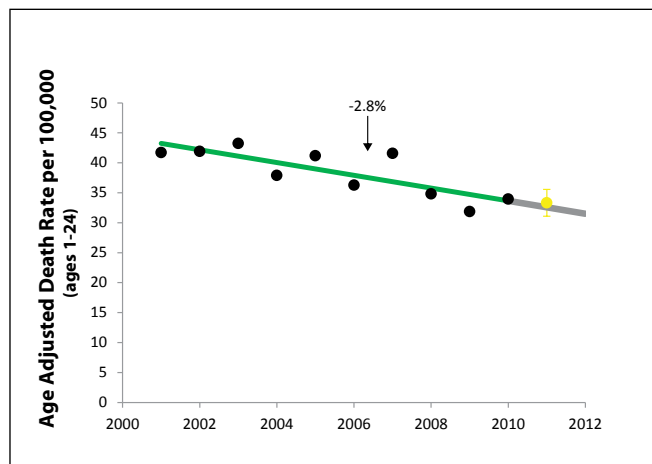
Current Rate (vs. expected) = -9.4% Better ●



1-24 Year Old Death

Baseline Trend = -2.8%/year Much Better ↓

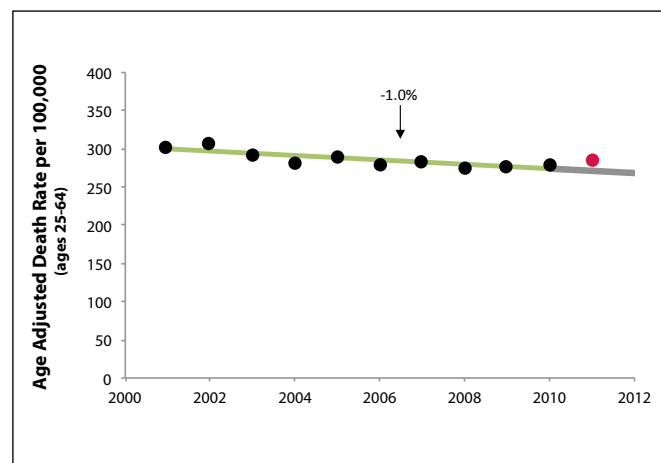
Current Rate (vs. expected) = +2.1% No Difference ●



25-64 Year Old Death

Baseline Trend = -1.0%/year Better ↓

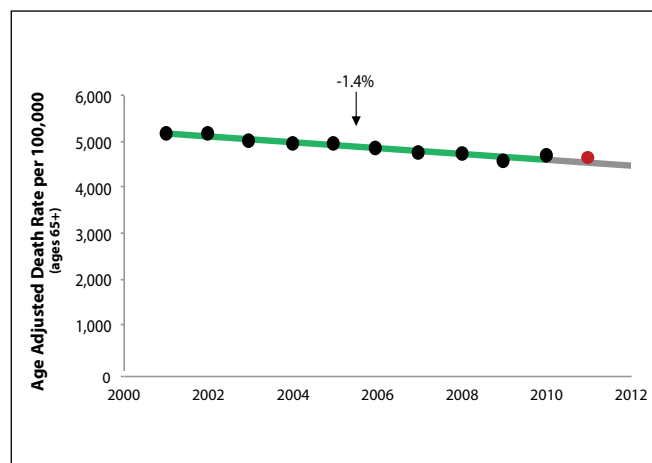
Current Rate (vs. expected) = +4.6% Worse ●



65+ Year Old Death

Baseline Trend = -1.4%/year Much Better ↓

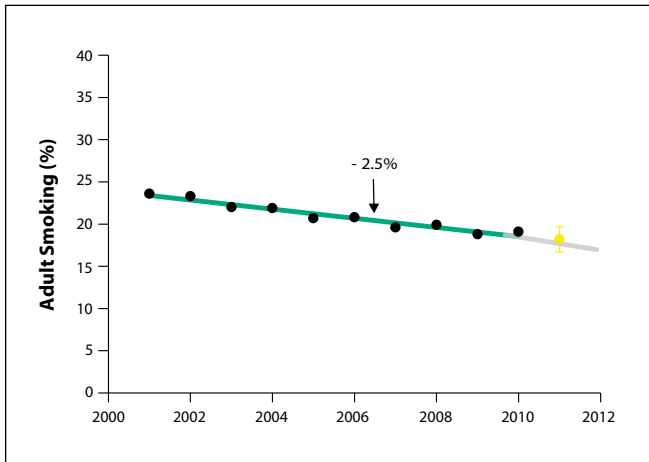
Current Rate (vs. expected) = +4.0% Worse ●



Health Behavior Trends

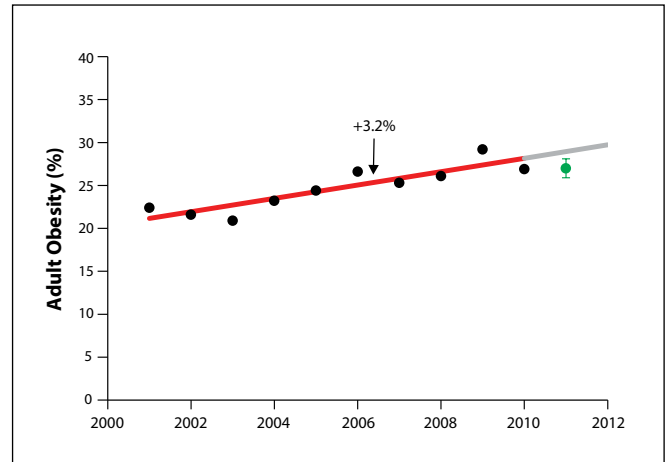
Smoking

Baseline Trend = -2.5%/year Much Better ↓
 Current Rate (vs. expected) = +0.8% No Difference ●



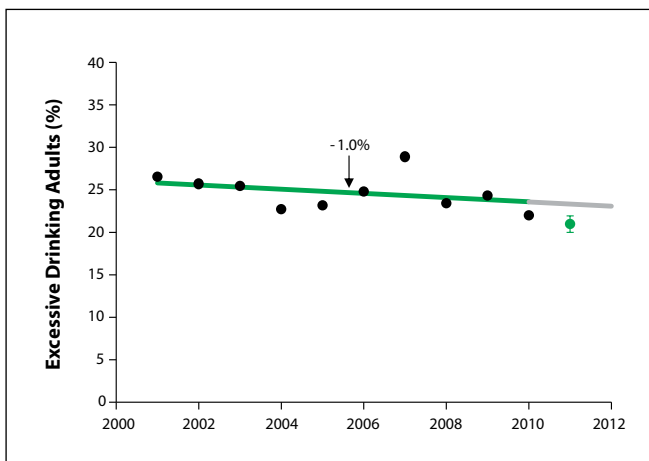
Obesity

Baseline Trend = +3.2%/year Much Worse ↑
 Current Rate (vs. expected) = -6.6% Better ●



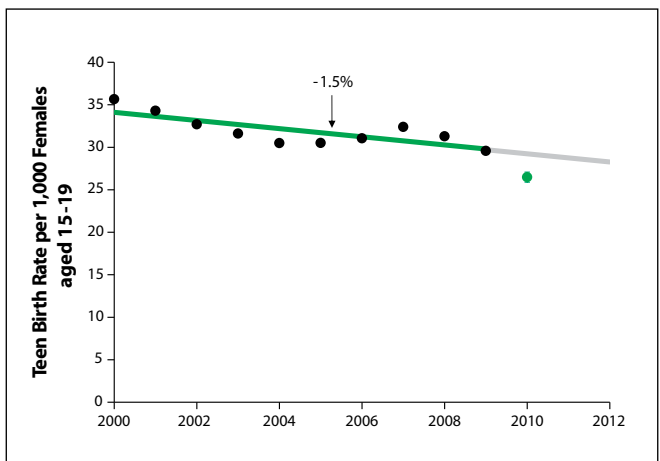
Excessive Drinking

Baseline Trend = -1.0%/year Much Better ↓
 Current Rate (vs. expected) = -10.1% Better ●



Teen Birth Rate

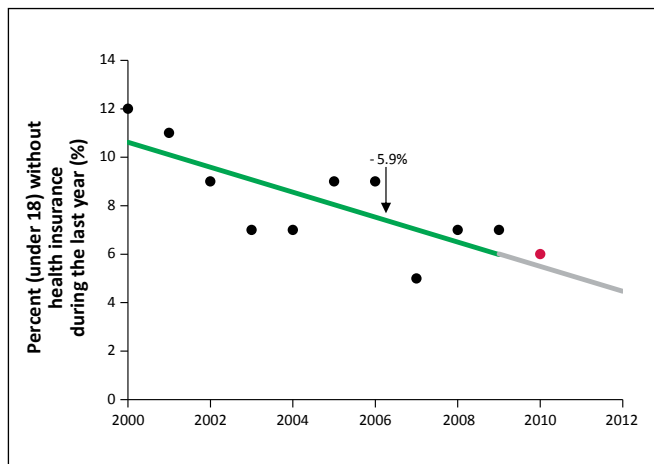
Baseline Trend = -1.5%/year Much Better ↓
 Current Rate (vs. expected) = -9.4% Better ●



Clinical Care Trends

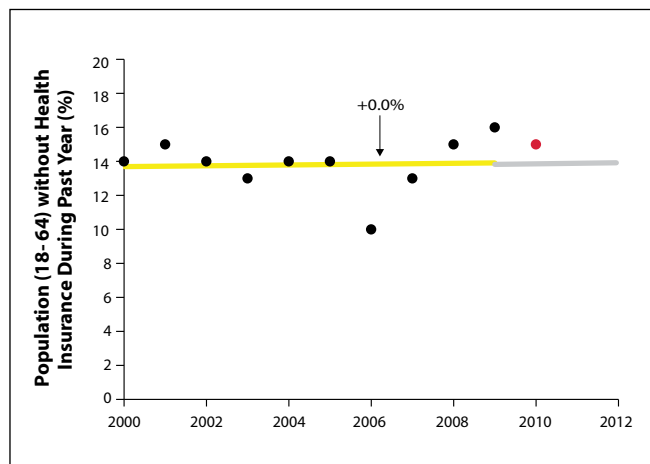
No Health Insurance (0-17)

Baseline Trend = -5.9%/year Much Better ↓
 Current Rate (vs. expected) = +12.2% Worse ●



No Health Insurance (18-64)

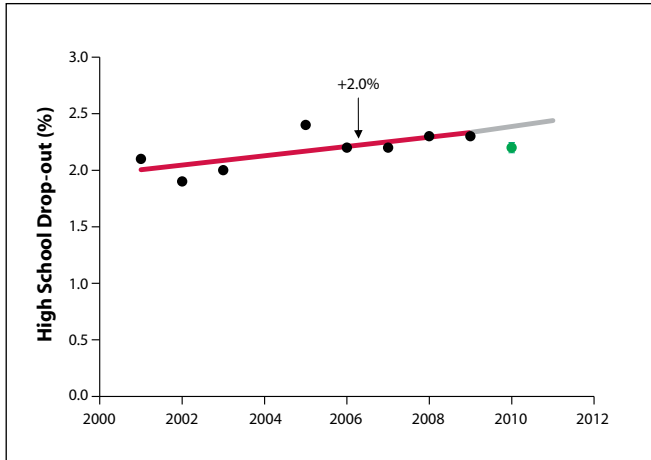
Baseline Trend = +0.0%/year No Change →
 Current Rate (vs. expected) = +8.3% Worse ●



Social and Economic Trends

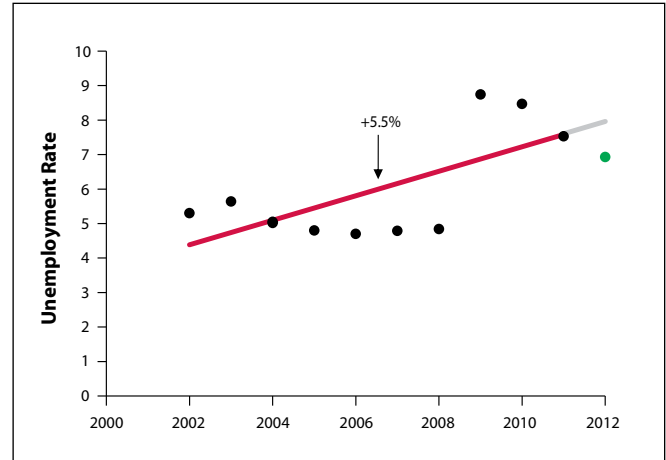
High School Drop-out

Baseline Trend = +2.0%/year Much Worse ↑
 Current Rate (vs. expected) = -8.3% Better ●



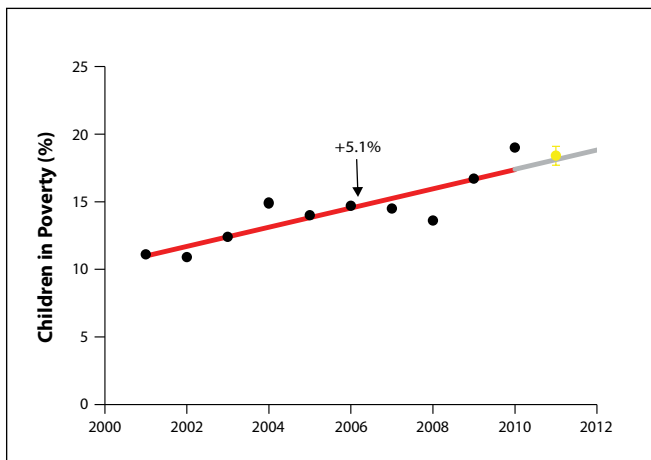
Unemployment

Baseline Trend = +5.5%/year Much Worse ↑
 Current Rate (vs. expected) = -12.8% Better ●



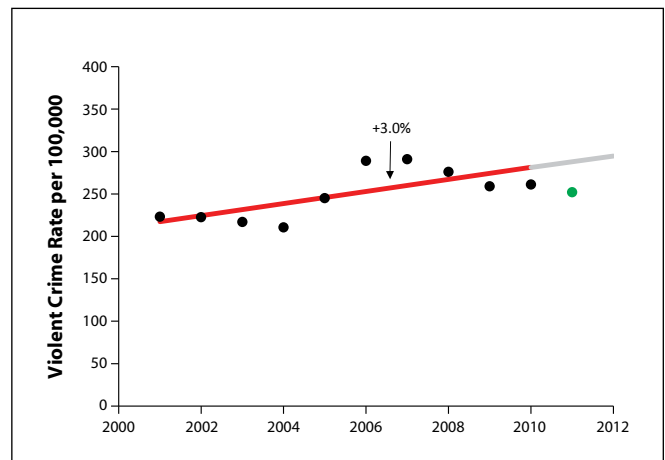
Children in Poverty

Baseline Trend = +5.1%/year Much Worse ↑
 Current Rate (vs. expected) = +1.6% No Difference ●



Violent Crime Rate

Baseline Trend = +3.0%/year Much Worse ↑
 Current Rate (vs. expected) = -12.6% Better ●

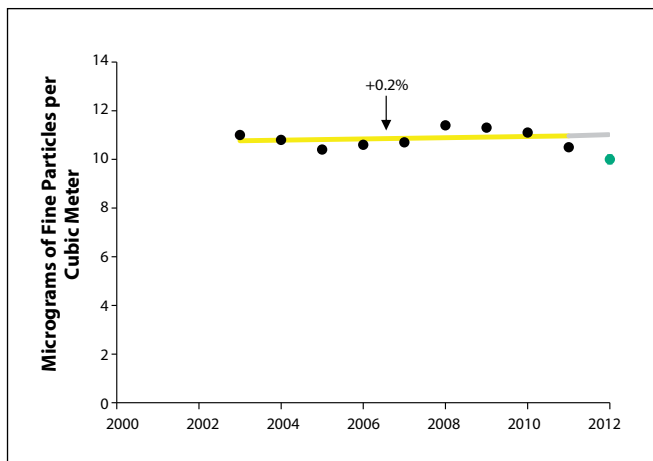


Physical Environment Trends

Air Pollution

Baseline Trend = +0.2%/year No Change →

Current Rate (vs. expected) = -9.0% Better ●



Data Sources and Technical Notes

Measure	Source	Current Year	Baseline Trend Years	Measure Definition
Premature (<75) death rate (per 100,000)	Wisconsin Interactive Statistics on Health	2011	2001-2010	Years per life lost before 75 (YPLL-75): the sum of the difference between age 75 and the age of death for deaths that occurred prior to 75, (age-adjusted to 2000 population) per 100,000 population
Low birthweight (%)	Wisconsin Interactive Statistics on Health	2010	2000-2009	The percent of live births for which the infant weighed less than 2,500 grams (approximately 5 lbs., 8 oz.)
Self-reported poor or fair health (%)	Behavioral Risk Factor Surveillance System	2011	2001-2010	Responses of “fair” or “poor” to the survey question: “In general, would you say that your health is excellent, very good, good, fair, or poor?”
All ages death rate (per 100,000)	Wisconsin Interactive Statistics on Health	2011	2001-2010	Total number of deaths age-adjusted to the 2000 standard U.S. population
Infant death rate (per 1,000 live births)	Wisconsin Interactive Statistics on Health	2010	2000-2009	Number of deaths before age 1 per 1,000 live births
1-24 year old death rate (per 100,000)	Wisconsin Interactive Statistics on Health	2011	2001-2010	Number of deaths between ages 1 and 24 per 100,000 age adjusted to the 2000 standard U.S. population
25-64 year old death rate (per 100,000)	Wisconsin Interactive Statistics on Health	2011	2001-2010	Number of deaths between ages 25 and 64 per 100,000 age adjusted to the 2000 standard U.S. population
65+ year old death rate (per 100,000)	Wisconsin Interactive Statistics on Health	2011	2001-2010	Number of deaths at 65 years of age or older per 100,000 age adjusted to the 2000 standard U.S. population
Smoking (%)	Behavioral Risk Factor Surveillance System	2011	2001-2010	Percentage of adults who are current smokers
Obesity (%)	Behavioral Risk Factor Surveillance System	2011	2001-2010	Percent of adults with a Body Mass Index greater than or equal to 30kg/m ²
Excessive drinking (%)	Behavioral Risk Factor Surveillance System	2011	2001-2010	The percent of the adult population that consumed more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days (binge drinking) or drank more than 1 (women) or 2 (men) drinks per day on average (heavy drinking)
Teen birth rate (per 1,000)	Wisconsin Interactive Statistics on Health	2010	2000-2009	Number of live births per 1,000 females aged 15-19
No health insurance (0-17) (%)	Family Health Survey	2010	2001-2009	Percent of children between ages 0 and 17 without continuous health insurance coverage during the past year
No health insurance (18-64) (%)	Family Health Survey	2010	2000-2009	Percent of adults between ages 18 and 64 without continuous health insurance coverage during the past year
High school drop-outs (%)	National Center for Education Statistics	2010	2001-2009*	Count of drop-outs divided by the base enrollment for grades 9-12
Unemployment (%)	Bureau of Labor Statistics	2012	2002-2011	Unemployed (individuals who do not have a job, have actively looked in the prior 4 weeks, and are currently available for work) divided by workforce
Children in Poverty (%)	Small Area Income and Poverty Estimates	2011	2001-2010	The percent of children under age 18 living below the Federal Poverty Line
Violent crime rate (per 100,000)	Wisconsin Office of Justice Assistance	2011	2001-2010	The number of violent offenses that involve face-to-face confrontation between the victim and the perpetrator per 100,000 population
Air Pollution (µg/m ³)	America's Health Rankings/Environmental Protection Agency	2012	2003-2011	The average exposure of the general public to particulate matter of 2.5 microns or less in size (PM _{2.5}) measured in µg/m ³

*Does not include 2003-2004 school year

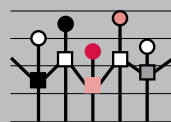


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