

2023

# Taking the **PULSE**

How Quality Health Care  
Builds a Better Economy



Wisconsin  
Technology  
Council

A Wisconsin Technology Council report on the  
competitive advantage of quality health care



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# EXECUTIVE SUMMARY AND KEY FINDINGS

The health-care industry has been through a lot in the last few years

- *A global pandemic that refuses to be fully over*
- *Rising costs in inflationary times and overall financial pressures, especially in 2022*
- *Workforce shortages that began well before COVID-19 but made worse because of it*
- *The need to better manage data while avoiding professional burnout*
- *Increased pressures on patient mental and behavioral health*
- *The need to integrate technology improvements in diagnostics and treatments alike.*



And yet, caregivers and practitioners in Wisconsin hospitals and health care have strived to maintain a commitment to quality that continues to set the state apart from many of the nation's 50 states.

The 2017-18 edition of *Taking the Pulse: How quality health care builds a better bottom line*, documented how Wisconsin's (mostly) non-profit hospitals and related health systems were supplying top-quartile quality at prices that only somewhat exceeded national averages.

Five years later, quality care is still the norm across Wisconsin, despite many pressures. The goal of "[2023 Taking the Pulse: How Quality Health Care Builds a Better Economy](#)" is to explain how the state's health care ecosystem – from the research lab to the clinician to the hospital room – propels Wisconsin in tangible ways.

It is vital to Wisconsin's economic competitiveness that efforts to improve health care quality continue. Please read on to learn why.

## KEY FINDINGS

- Promote measurable, quality health care at generally affordable prices as a magnet for workers and companies. We live in an era when health care can attract people and expanding companies. State agencies and private associations with the ability to promote Wisconsin's health care quality should do so.
- Help rural health care and hospitals retain their resiliency. Wisconsin hasn't seen a hospital close since 2011. Like broadband and housing, quality and available health delivery systems are essential to sustaining the rural economy.
- Encourage teaching institutions to efficiently produce health care workers. Wisconsin has what some people describe as a surplus of higher-education schools. Those schools can better demonstrate their value by continuing to train potential health industry workers.
- Keep working to increase the availability of mental-health treatment, especially in an era when opioids, fentanyl and other abused substances are killing far too many people.
- Establish more partnerships between Wisconsin health research resources and providers. Health information software is just as important to maintaining quality and controlling costs as are improved diagnostics, imaging and therapeutics. Wisconsin has resources in each of those sectors, something few states can claim.

# ASSESSING HEALTH QUALITY

## What do the numbers say?

*In its 2022 “National Healthcare Quality and Disparities Report,” the federal Agency for Healthcare Research and Quality included Wisconsin among 12 top quartile states based on a collection of indicators from the period 2016-2021.*

The AHRQ noted that four states in the Midwest region – Iowa, Minnesota, North Dakota and Wisconsin – were among the nation’s 12 top quartile states over that period. [Please see state-by-state chart on page 3.](#)

This follows a run dating to 2006 in which Wisconsin ranked 1st (three times), 2nd (four times), 3rd (two times); 4th (one year) and 7th (one year) among the 50 states in AHRQ rankings over the course of 11 years.

The federal Medicare program regularly ranks hospitals on the quality of care, although not every hospital is rated each year. Among Wisconsin’s 152 hospitals of all types and sizes, 24 hospitals received the top “five-star” ranking from Medicare; 27 earned a four-star rating; 19 merited three stars; six were two-star and none were one-star. The others were unranked at the time.

That persistent quality can be further demonstrated through comparative measures such as mortality tied to hospitalization, Medicare 30-day readmissions and length of stay, as well as access metrics that speak to getting people who need help into the health care system. Here are some top-line numbers:

**Mortality amenable to health care:** This is defined as deaths from a collection of diseases, such as diabetes and appendicitis, that are potentially preventable given effective and timely health care. Wisconsin stands at 70.8 deaths per 100,000; the U.S. average is 86.8. It is important to note, however, that U.S. mortality rates are not as good as those in comparable countries.

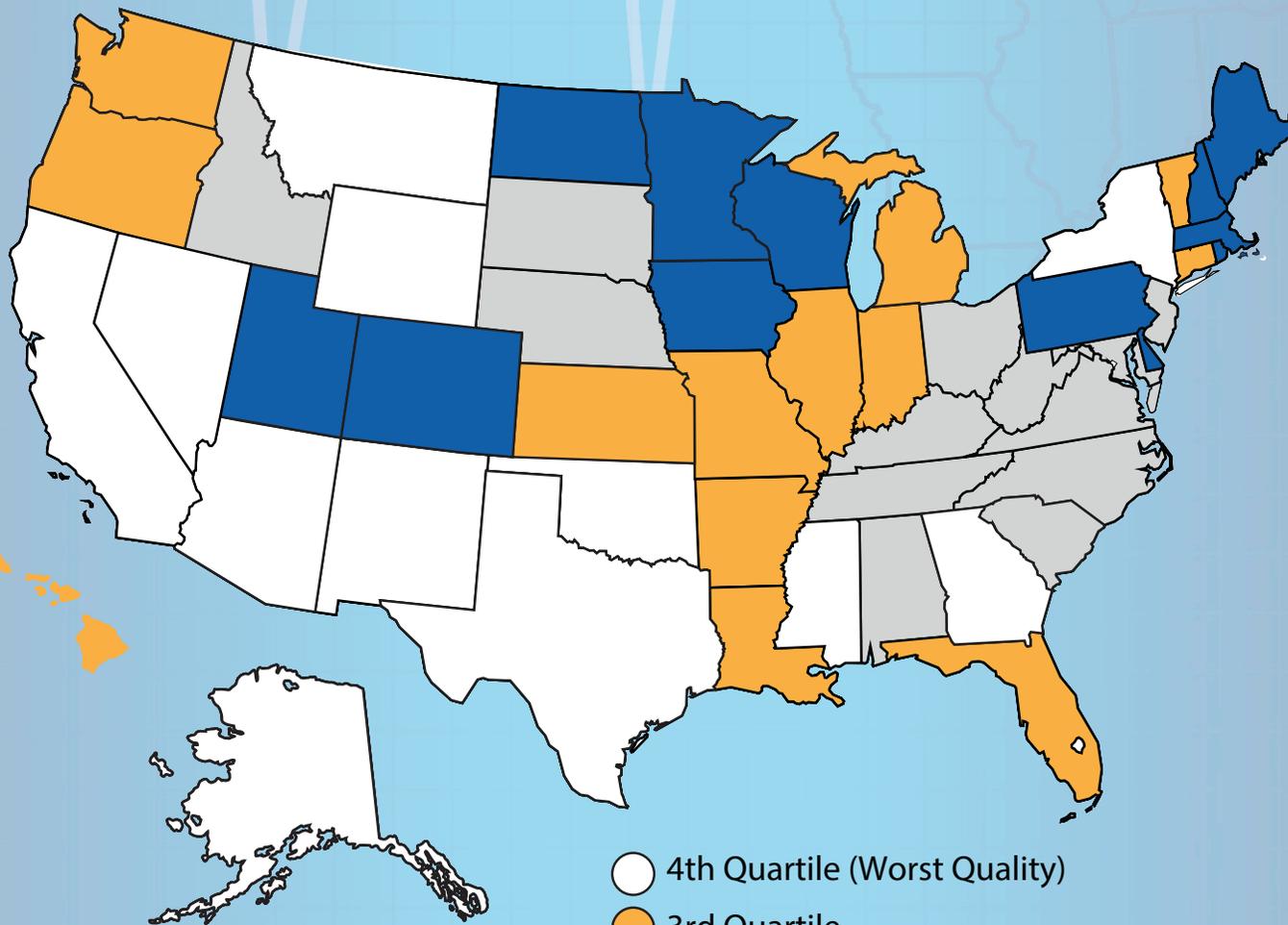


**Medicare 30-day readmissions:** This is defined as readmissions of Medicare patients within 30 days of being released. Wisconsin stood at 28.1 per 1,000 beneficiaries, per 2020 statistics from the federal Agency for Healthcare Research and Quality. The U.S. average for the same year was 33.2, according to AHRQ. These rates are important because Medicare can reduce reimbursements to hospitals by up to 3%. Wisconsin has significantly fewer penalized hospitals than the U.S. average. Only two of 152 Wisconsin hospitals received the maximum penalty in that year, according to Becker’s Healthcare. In 2022, according to the Wisconsin Hospital Association, 22% of eligible Wisconsin hospitals received no penalty for the year.

**Length of stay:** This measures how long people must stay in the hospital before improving to the point of release. Wisconsin is 4.3 days, which is lower than every state in the region and the latest U.S. average of 4.5 days. However, the trend line is growing because many patients today are sicker and require more complex, intensive care.

[Please see our charts on the metrics on pages 5.](#)

# Overall Quality of Care, by State, 2016-2021



2022 National Healthcare Quality and Disparities Report.  
Rockville, MD: Agency for Healthcare Research and Quality;  
October 2022. AHRQ Pub. No. 22(23)-0030.

- 4th Quartile (Worst Quality)
- 3rd Quartile
- 2nd Quartile
- 1st Quartile (Best Quality)

**NOTE:** All state-level measures with data were used to compute an overall quality score for each state based on the number of quality measures above, at, or below the average across all states. States were ranked and quartiles are shown on the map. The states with the worst quality score are in the fourth quartile, and states with the best quality score are in the first quartile. Historically, the NHQDR has included state-specific estimates for selected AHRQ Quality Indicators based on Healthcare Cost and Utilization Project data.

# ASSESSING HEALTH QUALITY, cont.

## What do the numbers say?



Access to health care is an important measure of quality because people who can't get or afford care are more likely to get sick, stay sick and perhaps suffer longer and more deeply. According to The Commonwealth Fund, Wisconsin stacks up moderately well compared to other states.

- Adults who went without care because of cost: It's 7% in Wisconsin and 10% nationally.
- Adults with a usual source of care: Wisconsin stands at 86.7%; the U.S. average is 83.2%.
- Adults with any mental illness who did not receive treatment: Wisconsin stands at 45%; the U.S. average is 56%. Neither number is good.
- Adults without a dental visit: It's 28.3% in Wisconsin and 35.3% nationally.
- Children who received needed health care: It is 84.8% in Wisconsin and 81.3% nationally.
- Children with a medical and dental preventive care visit in the last year: Wisconsin lags in this category, 63.4% versus 65.7% in the United States as a whole.

Please see a chart related to health insurance coverage on page 15.

While national figures show Wisconsin fares better than most states (see adjacent sidebar), there are concerns about mental health resources in Wisconsin. Gov. Tony Evers called for \$500 million in new spending on mental health initiatives in his January 2023 State of the State address and declared 2023 the "Year of Mental Health," with the money targeted to school and other mental and behavioral health programs.

### The State of Mental Health in Wisconsin: One national group's view

In its report, "Ranking the states 2023," Mental Health America scored Wisconsin among the top 10 states in both its adult and youth rankings.

Wisconsin was ranked 5th for adults in terms of lower prevalence of mental illness and higher rates of access to care. The seven measures that make up the MHA's adult ranking are:

- Adults with Any Mental Illness (AMI)
- Adults with substance use disorder in the past year
- Adults with serious thoughts of suicide
- Adults with AMI who did not receive treatment
- Adults with AMI reporting unmet need
- Adults with AMI who are uninsured
- Adults reporting 14+ mentally unhealthy days a month who could not see a doctor due to costs

Wisconsin was ranked 3rd for youth in terms of lower prevalence of mental illness and higher rates of access to care. The seven measures that make up the MHA's youth ranking are:

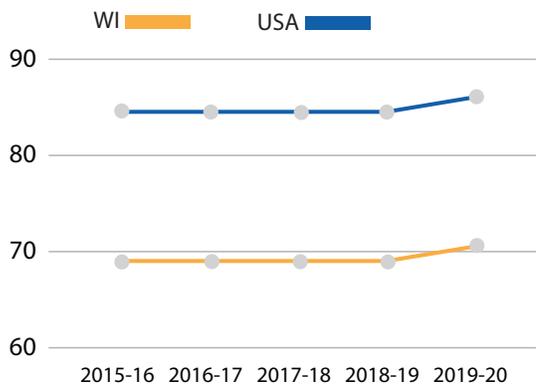
- Youth with at least one major depressive episode (MDE) in the past year
- Youth with substance use disorder in the past year
- Youth with severe MDE
- Youth with MDE who did not receive mental health services
- Youth with severe MDE who received some consistent treatment
- Youth with private insurance that did not cover mental or emotional problems
- Students (K+) identified with emotional disturbance for an individualized education program.

Source:  
<https://mhanational.org/issues/2023/ranking-states>

\*Deaths from certain causes before age 75 that are potentially preventable with timely and effective healthcare

## Mortality Amenable To Health Care\*

Deaths per 100,000 Population

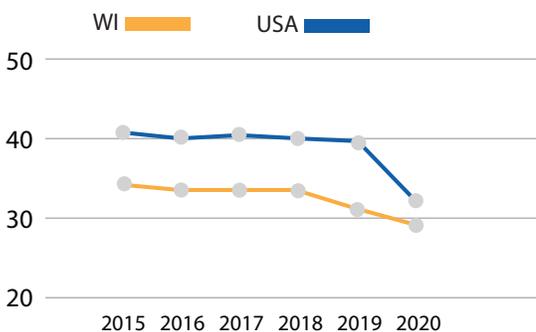


State	2015-16	2016-17	2017-18	2018-19	2019-20
Minnesota	55.2	54.5	55.9	56.7	57.2
● WISCONSIN	69.1	69.1	69.7	69.6	70.8
Iowa	71.7	73.7	75.2	77	78
Illinois	85.9	83.8	84.4	84.2	86.4
Michigan	92.6	92.3	91.5	90.5	95.7
Indiana	93.5	94.4	94.3	93.5	96.2
Ohio	95.4	95.9	95.4	94.6	96.3
Missouri	95.3	95.7	96.9	96.4	99.5
<b>USA</b>	<b>84.6</b>	<b>84.5</b>	<b>84.6</b>	<b>84.2</b>	<b>86.8</b>

Source: Mortality amenable to health care, deaths per 100,000 population | Commonwealth Fund Health System Datacenter

## Medicare 30-day Hospital Readmissions

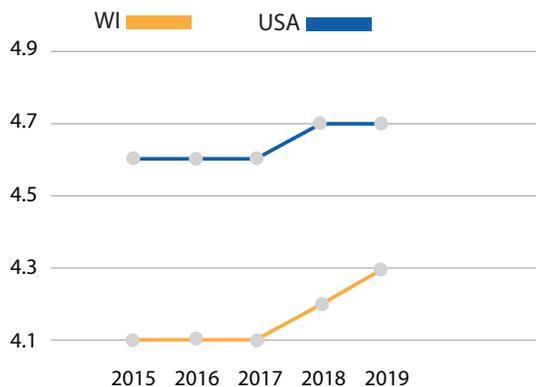
Readmissions per 1,000 Beneficiaries



State	2015	2016	2017	2018	2019	2020
Iowa	33.4	31	31.2	29.7	29.1	24.8
● WISCONSIN	34.4	33.4	33.4	33	31.7	28.1
Minnesota	36.4	35.2	37.2	37.5	36.4	30.1
Indiana	42	40.1	40.4	40.8	40.4	33.9
Missouri	45.5	43.6	44.5	44.5	43.2	36.7
Ohio	46.5	45	46	45	44.7	38.8
Illinois	47.1	46	47.2	47.4	47.6	40.2
Michigan	53.8	51.7	51.5	49.1	48.4	41
<b>USA</b>	<b>41.6</b>	<b>40.4</b>	<b>40.9</b>	<b>40.1</b>	<b>39.8</b>	<b>33.2</b>

Source: Medicare 30-day Hospital Readmissions, per 1,000 beneficiaries | Commonwealth Fund Health System Datacenter

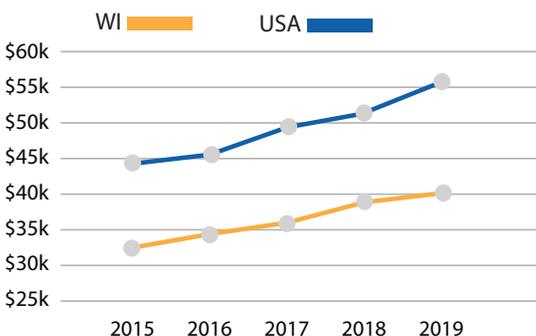
## Length of Stay



State	2015	2016	2017	2018	2019
● WISCONSIN	4.1	4.1	4.1	4.2	4.3
Minnesota	4.3	4.2	4.2	4.3	4.4
Illinois	4.4	4.4	4.4	4.4	4.5
Iowa	4.2	4.2	4.3	4.4	4.5
Indiana	4.5	4.5	4.6	4.5	4.6
Michigan	4.5	4.5	4.5	4.6	4.7
Missouri	4.7	4.7	4.7	4.7	4.8
<b>USA</b>	<b>4.6</b>	<b>4.6</b>	<b>4.6</b>	<b>4.7</b>	<b>4.7</b>

Source: Hospital Inpatient State Statistics | Agency for Healthcare Research and Quality: HCUPnet

## Mean Inpatient Charges



State	2015	2016	2017	2018	2019
Iowa	\$28,867	\$30,768	\$30,668	\$32,698	\$34,798
Michigan	\$29,117	\$31,254	\$32,662	\$34,511	\$37,113
● WISCONSIN	\$32,502	\$34,540	\$36,338	\$38,238	\$40,616
Minnesota	\$33,073	\$34,639	\$35,947	\$37,859	\$41,233
Missouri	\$36,585	\$38,232	\$40,566	\$42,746	\$46,250
Indiana	\$37,488	\$39,173	\$42,400	\$44,960	\$48,043
Illinois	\$40,027	\$42,416	\$44,736	\$47,271	\$49,691
<b>USA</b>	<b>\$44,030</b>	<b>\$46,959</b>	<b>\$49,777</b>	<b>\$52,937</b>	<b>\$56,610</b>

Source: Hospital Inpatient State Statistics | Agency for Healthcare Research and Quality: HCUPnet

# ASSESSING HEALTH QUALITY, cont.

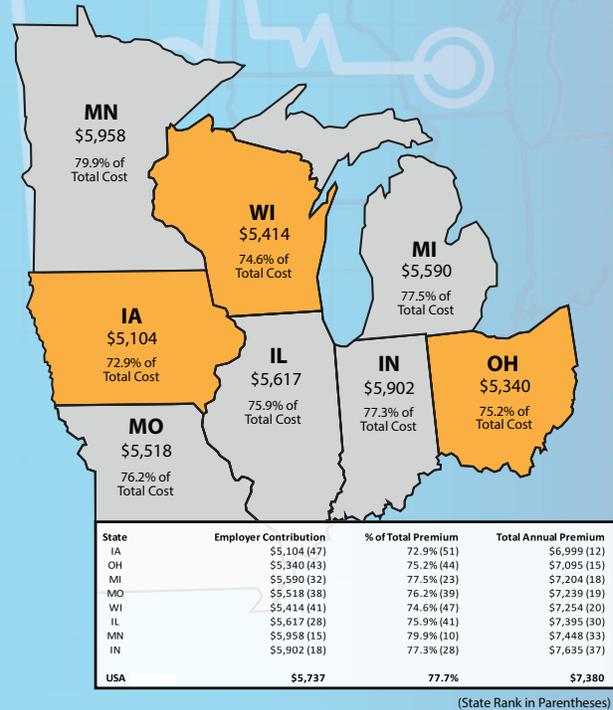
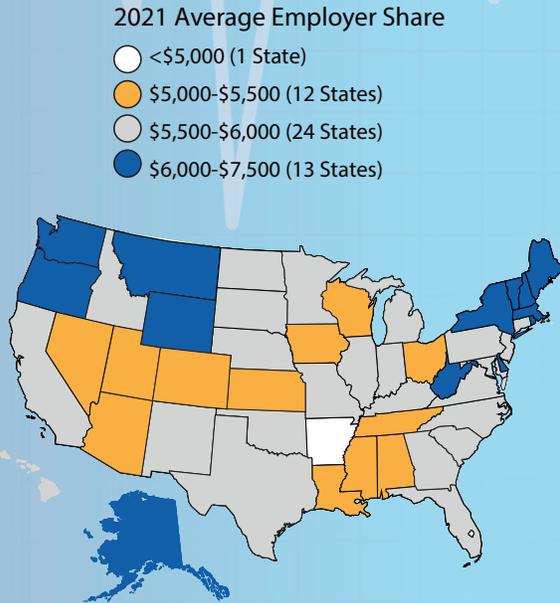
## What do the numbers say?

While more subjective, here are other quality rankings that support the notion of high quality among many Wisconsin hospitals and health systems.

- U.S. News & World Report magazine ranked Wisconsin 10th among the 50 states in overall health care quality in 2022.
- MoneyGeek ranked the state 20th in term of reported health “outcomes,” access to providers and coverage costs.
- A study by WalletHub ranked Wisconsin 10th among all states in its scoring of “best hospitals” behind Massachusetts, New Hampshire, Colorado, Vermont, Hawaii, Rhode Island, Connecticut, Utah and Minnesota.
- In mid-July 2022, Merative (formerly known as IBM Watson Health) and Fortune released a list of the nation’s top 100 hospitals and top 15 health systems. Among major teaching hospitals, Milwaukee’s Froedtert Hospital ranked 11th and University Hospital in Madison ranked 15th. Among the top five small health systems in the United States, Franciscan Sisters of Christian Charity Sponsored Ministries in Manitowoc ranked 3rd.
- Healthgrades scored three Wisconsin hospitals in the nation’s top 100 in 2022: Froedtert Menomonee Falls, Ascension Columbia St. Mary’s in Milwaukee, and Froedtert Milwaukee.

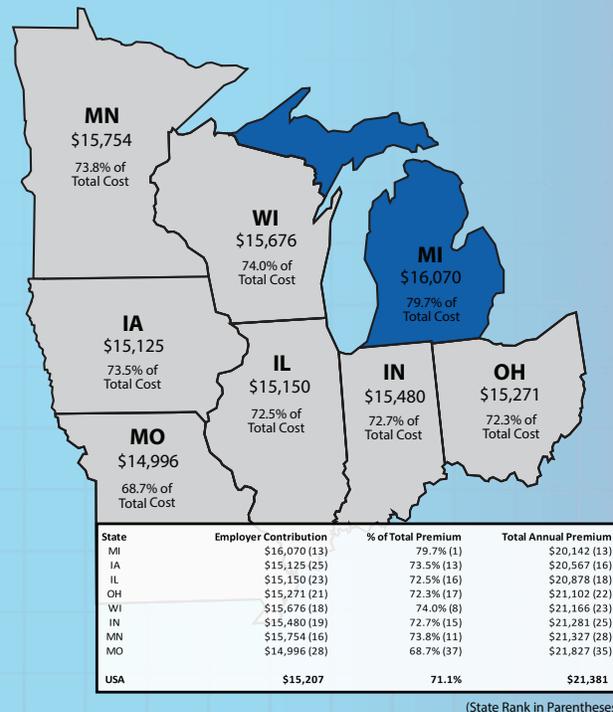
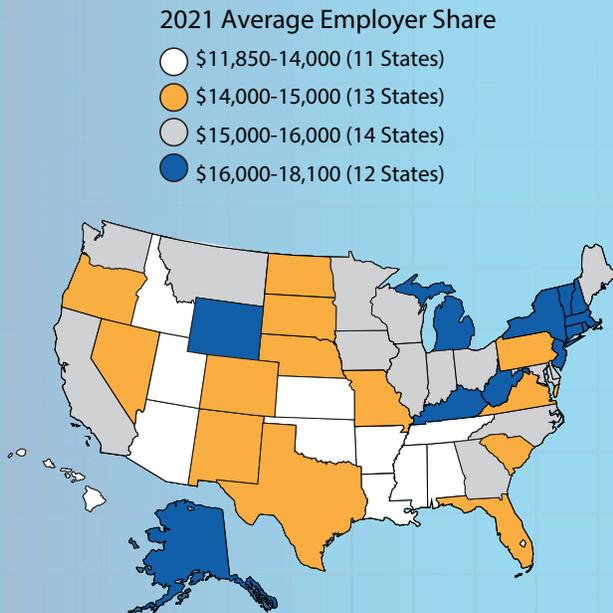


# Average Employer Share Of Single Premium Health Insurance



Source: 2021 Average Single Premium per Enrolled Employee for Employer-based Health Insurance | Kaiser Family Foundation

# Average Employer Share Of Family Premium Health Insurance



Source: 2021 Average Family Premium per Enrolled Employee for Employer-based Health Insurance | Kaiser Family Foundation

# ABOVE-AVERAGE QUALITY

## But at what cost?

*Health care quality is vital. However, there may be limits to what people, insurers and employers will pay for high-quality care. How does Wisconsin stack up on the “value” of such care?*

Forbes Advisor analyzed metrics gathered by the Kaiser Family Foundation to compare all 50 states and the District of Columbia on average health care costs per person. The U.S. average was more than \$10,000; Wisconsin was the 8th least expensive state overall with a per capita rate of \$9,626 per person.

The study also found that Wisconsin’s health care cost increases over the past five years were among the nation’s six lowest.

Here is how Wisconsin’s Midwest neighbors compared on per capita costs within the Forbes Advisor analysis, with per capita costs making up 20% of the total score. Ten other related metrics were factored into Wisconsin’s No. 8 overall ranking.

- Ohio, \$10,093 per capita
- Minnesota, \$10,510 per capita
- Iowa, \$9,265 per capita
- Illinois, \$9,601 per capita
- Indiana, \$9,914 per capita

Wisconsin health insurance premiums are roughly in line with U.S. averages and the state’s Midwest neighbors.

Total annual premiums for single health coverage in 2021 were \$7,254, fourth-lowest in an eight-state region and compared with the U.S. average of \$7,380. The employer share in Wisconsin was \$5,414, also fourth-lowest in the region and well under the U.S. average of \$5,737 for an employer-paid share.

Total family premiums in Wisconsin in 2021 were \$21,166, fifth-highest in the eight-state region but still lower than the U.S. average of \$21,381. The employer contribution to family premiums in Wisconsin was \$15,676, which was the second highest in the region and higher than the U.S. average of \$15,207.



## Consumer price comparison tool updated

The Wisconsin Hospital Association has launched an updated version of its PricePoint tool, which helps patients and other users compare prices for health care services in the state. <https://www.wipricepoint.org/>

The WHA Information Center announced the redesigned tool, which includes a “plain language” search function meant to improve transparency. This new function, supported by an Illinois company called Intelligent Medical Objects, enables users to search for generic service terms or standardized codes assigned to specific services.

The tool provides information about the median cost across multiple facilities, the average time of stay associated with the service and other information. That includes care quality data, out-of-pocket costs, insurance options, hospital financial assistance programs and more.

WHAIC Vice President Jennifer Mueller said the redesign “is intended to assist consumers as they work with their health care provider and, importantly, their insurance company or other third-party payers to determine the financial obligations for hospital services they receive.”

The PricePoint tool has existed since 2005 and was expanded by WHA in 2017 to include services and charges from non-hospital care providers in Wisconsin.

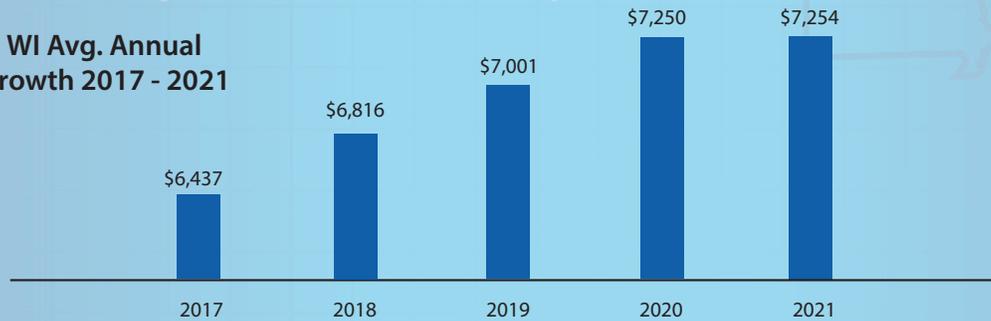
Condensed from a Jan. 26, 2023 news story by Wis-Business.com

# Wisconsin Health Insurance Single Premium Growth

State	Avg. Annual Growth 2017 - 2021	2017	2018	2019	2020	2021
WI	3.17% (16)	\$6,437	\$6,816	\$7,001	\$7,250	\$7,254
MI	3.19% (17)	\$6,388	\$6,322	\$6,705	\$6,683	\$7,204
OH	3.39% (21)	\$6,247	\$6,804	\$7,178	\$6,989	\$7,095
IL	3.47% (22)	\$6,493	\$7,123	\$7,157	\$7,376	\$7,395
MO	3.48% (23)	\$6,354	\$6,664	\$6,800	\$7,179	\$7,239
IA	3.55% (25)	\$6,128	\$6,796	\$6,657	\$6,932	\$6,999
MN	4.70% (35)	\$6,268	\$6,781	\$6,904	\$6,910	\$7,448
IN	5.97% (48)	\$6,162	\$6,778	\$6,957	\$7,319	\$7,635
<b>USA</b>	<b>3.97%</b>	<b>\$6,368</b>	<b>\$6,715</b>	<b>\$6,972</b>	<b>\$7,149</b>	<b>\$7,380</b>

(State Rank In Parentheses)

WI Avg. Annual Growth 2017 - 2021



Source: 2021 Average Single Premium per Enrolled Employee for Employer-based Health Insurance | Kaiser Family Foundation

# Wisconsin Health Insurance Family Premium Growth

State	Avg. Annual Growth 2017 - 2021	2017	2018	2019	2020	2021
IL	1.5% (6)	\$19,656	\$20,407	\$20,659	\$21,775	\$20,878
MI	1.6% (7)	\$18,929	\$18,242	\$20,425	\$20,008	\$20,142
WI	3.1% (18)	\$18,785	\$19,555	\$20,345	\$21,474	\$21,166
MN	3.8% (22)	\$18,507	\$19,327	\$20,751	\$20,624	\$21,327
OH	4.0% (27)	\$18,185	\$19,640	\$19,621	\$20,088	\$21,102
MO	4.0% (28)	\$18,763	\$19,249	\$19,900	\$21,231	\$21,827
IN	4.1% (31)	\$18,253	\$19,551	\$21,169	\$20,125	\$21,281
IA	5.0% (41)	\$17,086	\$18,192	\$18,752	\$18,934	\$20,567
<b>USA</b>	<b>3.6%</b>	<b>\$18,687</b>	<b>\$19,565</b>	<b>\$20,486</b>	<b>\$20,758</b>	<b>\$21,381</b>

(State Rank In Parentheses)

WI Avg. Annual Growth 2017 - 2021



Source: 2021 Average Family Premium per Enrolled Employee for Employer-based Health Insurance | Kaiser Family Foundation

# ABOVE-AVERAGE QUALITY, cont.

## But at what cost?

Wisconsin is among the regional leaders in slowing the rate of growth in insurance premiums from 2017 through 2021, a sign that cost increases may be slowing. One reason behind the slower pace of increases may be less concentration among payers (insurance plans) in Wisconsin compared with other states.

[Please see charts related to insurance premiums and coverage on pages 7, 9 and 15.](#)

Another reason may be that, despite its rural nature, Wisconsin does not have many counties tagged as primary care or hospital “health deserts.” Only 11 of 72 Wisconsin counties were designated primary care deserts (14th best in the nation) in a February 2022 report by Sidecar Health. If people live near a hospital, they can usually receive acute or trauma care more quickly, which can be a factor in health insurance rates.

Becker’s Hospital Review, in two year-end 2022 reports, noted greater financial stability in Wisconsin hospitals than in most states. Across the United States, 220 rural hospitals — more than 10 percent nationwide — were at immediate risk of closing because of financial losses and lack of financial reserves to sustain operations, according to the Center for Healthcare Quality and Payment Reform.

Wisconsin ranked 43rd on the “immediate risk of closure” list with just one rural hospital out of 72 in the state on the brink. That put the state in a league with Iowa, Nebraska and Colorado. Only Nevada, Massachusetts, Arizona, Delaware, Maryland and New Jersey were listed as better in percentage terms – but they collectively have only 42 rural hospitals.

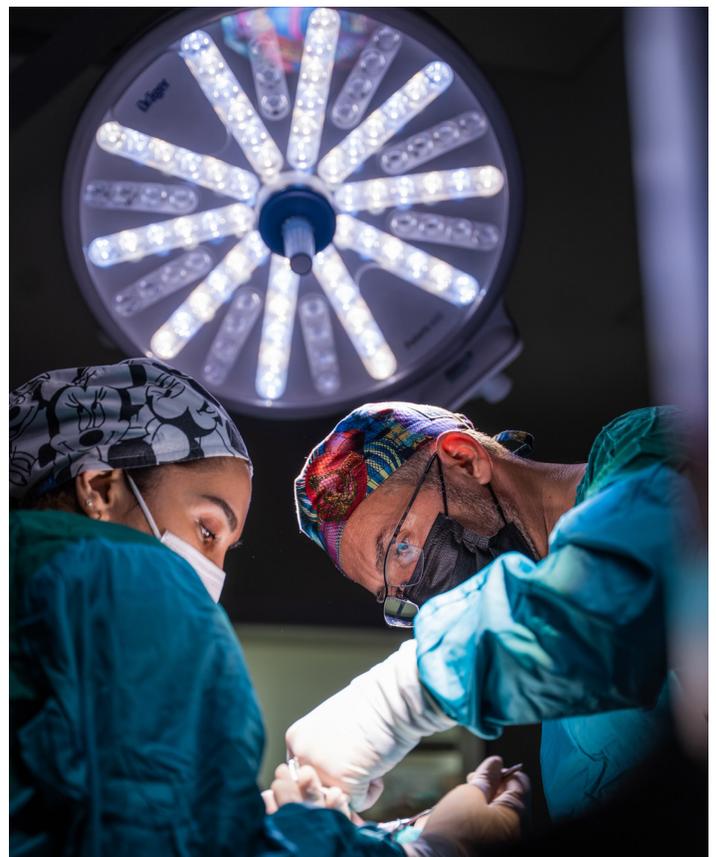
Becker’s also noted that more than 50 U.S. hospitals reported layoffs in 2022, but no layoffs were recorded in Wisconsin.

Worker’s compensation insurance costs in Wisconsin have continued a steady decline. Beginning Oct. 1, 2022, Wisconsin companies paid 8.47% less in worker’s compensation insurance rates than they did the prior year, according to the state Department of Workforce Development.

The 2022 rate decrease, approved by the Wisconsin Commissioner of Insurance, marked the seventh year in a row worker’s compensation insurance premiums declined in Wisconsin.

The same decline in costs is true in most states, according to the National Academy of Social Insurance. However, Wisconsin’s rate of decline was 20th best among the 50 states per \$100 of covered wage. Wisconsin’s 2020 rate of \$1.32 per \$100 compared to \$1.72 in 2016.

The state Department of Workforce Development, which administers workers’ compensation in Wisconsin, has noted that average payment rates are lower than all but one neighboring state. The state also scored well (7th best) when it comes to claims exceeding seven days of lost time, based on a DWD survey of 18 states. That means Wisconsin employees are getting the care they need and are getting back to work faster than workers elsewhere.



# From the experts: Emerging trends in health care

Here is a summary of what three respected publications see as major trends in the year ahead. Search online for the full summaries.

1. Expect patient segmentation at scale. The notion that all patients should receive the same clinical model increasingly is being called into question by those seeking to advance consumer engagement. Some health-care companies are focused on further segmenting their services to differentiate themselves and grow within diverse populations.
2. Pharmacy roles will expand. Pharmacists and pharmacy technicians are often the most accessible health care providers in their communities. Both roles will continue to see an evolution in their scope of practice to include direct patient care.
3. Look for a boost in remote-patient monitoring. A quarter of the nation's adult population with chronic conditions will use remote-patient monitoring tools next year.
4. A new venture capital feeding frenzy is coming. Soaring interest rates have brought higher capital costs for startup companies that now find themselves at an unexpected crossroads. This leaves many startups with three options: Raise another round of capital at unfavorable terms, initiate layoffs to save cash or sell the company.

*American Hospital Association*

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1. Artificial intelligence tools in drug discovery, medical imaging and administrative work.
2. Remote health care – virtual hospitals, health-care communities and telehealth.
3. “Retail” health care, meaning the amount of health-care business conducted through retail outlets such as Walmart, Amazon and CVS.
4. Wearable medical devices used by people to track their own health and exercise activity.
5. Precision medicine, a broad category in which drugs and other treatments are specifically tailored to a group of patients based on factors such as age, genetics or risk.

*Forbes Advisor*

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1. COVID-19 will continue to be a concern.
2. The health care industry will look to innovative technology solutions to help ensure health care equity.
3. Data from wearables will begin to play a bigger role in patient care.
4. Health care systems face the challenge of managing even more data.
5. Concerns over clinician burnout will continue.
6. Patients will have more options for care at home.
7. Health-care organizations will still be looking for ways to improve operations and care while increasing efficiency and value.
8. Patient mental health and emotional wellbeing will be a focus.
9. Precision health care will continue to grow.
10. Health-care tech will continue to explore artificial intelligence (AI) and digital health care modeling as health care providers begin to welcome it into their workflow.

*Precision Health*

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- Artificial intelligence and automation will continue to gain traction.
- Patients will increasingly choose providers that offer a user-friendly financial experience.
- Providers that fail to create a welcoming digital “front door” could be closing off revenue opportunities.

*Experian Health*

# HOMEGROWN RESOURCES CAN HELP IMPROVE QUALITY AND CONTROL COSTS

Wisconsin has nationally recognized resources in medical research and analysis – from diagnostics to data, and from imaging to therapeutics – that aren't readily available in many states. Here are a few examples of innovation in Wisconsin that bear watching by hospitals and health systems.

## EPIC SYSTEMS “MINING” HEALTH DATA

One example of how “big data” is influencing patient care is the Epic Health Research Network, which is a part of the Verona-based Epic Systems, which provides electronic health records for more patients in the United States than any other company.

The Epic Health Research Network is essentially a consortium of company customers who choose to contribute de-identified data on a mix of health issues that could stand to benefit from more study.

Tied to Epic's “Cosmos” platform, EHRN studies have focused on lead levels in drinking water, cancer screenings and prevalence, hospital stays of unvaccinated COVID-19 patients, incidence of Guillain-Barre syndrome with COVID patients, strep, influenza, C-section births, gun accidents and more.

Here is one startling example: A nationwide study conducted with Epic and University of Maryland researchers concluded just 5% of overdose patients in U.S. emergency rooms between 2017 and 2022 were tested for fentanyl. Testing for other opioids is 10 times more common, but fentanyl is a synthetic and 50 times more potent than morphine. In 2021, fentanyl overdoses were the leading cause of death for Americans aged 18 to 45. The study, powered by anonymous data from Epic's Cosmos database, will likely lead to rapid changes in standard toxicology screenings across the nation.

Not all Epic customers are part of the research network, but there are contributors from all 50 states representing more than 167 million past and present patients. About 5.7 billion de-identified patient encounters are recorded in the Epic universe.

Epic is also expanding its use of such data for doctors and other providers who are working with patients with rare diseases. That helps clinicians find other needles in a digital haystack. The data is also being mined for personalized, often genomic-based treatments for diseases by drilling down into specific characteristics of “look-alike” patients.

Data can also make health systems and providers more efficient. Sensitive to complaints from doctors and other users who say they are tethered to their keyboards, Epic is introducing features such as “Ambient” to allow spoken dictation of outcomes from patient visits.

Automated claims status updates, better check-in procedures, easier scheduling, better use of operating rooms, reduced service denials and physician “express lanes” are also up and running or in the works.

With worker shortages and burnout taking a toll, Epic customers were urged to automate routine functions that don't require a human touch and to make best use of features that may already be available to them. For example, a free artificial intelligence tool can help reduce the incidence of sepsis, a serious infection that sometimes starts after a medical procedure.

## EXACT SCIENCES EXPANDING CANCER DETECTION

Based in Madison, Exact Sciences is best known for Cologuard, its non-invasive colon cancer test. Colon cancer is often described as the most preventable and least prevented cancer. Numbers back the claim: Nine out of 10 people with colorectal cancer diagnosed in stages one or two live five or more years. Conversely, only one in 10 people diagnosed in stage four can expect a similar life span.

The company is not stopping there. “We aim to eradicate cancer and the suffering it causes through tests that help prevent cancer, detect it earlier and guide treatment,” said an Exact Sciences spokesman.

In addition to Cologuard, Exact Sciences also competes in the precision oncology market with Oncotype DX, a genetic-based treatment selection test for breast, prostate, and colon cancers. With some of its acquisitions, the company is building a multi-cancer early screening test to detect about 14 cancers, a test that would be one of earliest entrants in multi-cancer liquid biopsy cancer screening.

Exact Sciences has received approval from Japan's top health agency for its “Oncotype DX Breast Recurrence Score” program. It helps guide chemotherapy treatment recommendations and may reduce recurrences in certain cases. Breast cancer is the most common cancer in Japanese women.

Eight acquisitions have included companies such as Base Genomics, Thrive Earlier Detection, Biomatrix, Tardis and Prevention Genetics, a testing laboratory that grew initially out of research from the Marshfield Clinic Health System.

Studies into the potential of the liquid biopsy (primarily, blood samples) detection involve John Hopkins University, Geisinger and Exact's Thrive acquisition. Scientists say virtually all cancer releases signatures of itself into the blood. These signatures include circulating tumor DNA and elevated protein markers associated with cancer.



## **PROMEGA CORPORATION BUILDS “TOOLKITS,” MORE**

Fitchburg-based Promega is the “grandfather” of Wisconsin biotech, having launched in the late 1970s under the leadership of founder Bill Linton and becoming one of the first state startup companies to attract angel and venture capital. Several Wisconsin biotech firms can trace their lineage to Promega.

Among Promega’s 4,000 products are reagents, assays and benchtop testing platforms for scientists and others in the life sciences industry. Those products are used in fields such as cell biology; DNA, RNA and protein analysis; drug development; human identification and molecular diagnostics.

Today, Promega employs more than 1,800 people worldwide and more than 1,200 in its Madison-area facilities. It operates in 16 nations and has more than 50 global distributors. Uses of Promega products have ranged from COVID-19 testing to tracking West Nile Disease to examining genetic links to cancer.

A related Fitchburg company, The Usona Institute, is conducting cutting-edge research into the use of psilocybin.

Proponents say even single doses of psychedelic drugs such as psilocybin, the hallucinogenic found in “magic mushrooms,” can provide long-term benefits for some mental health patients. The groundbreaking of the \$60-million Usona facility came in 2021 as the company embarked on a Phase 2 study of psilocybin to treat depression. That study will take place at UW-Madison, Johns Hopkins University, Yale University and other sites.

## **STEM CELL RESEARCH COMES OF AGE**

FujiFilm-Cellular Dynamics Inc. is based in Madison’s University Research Park and has commercialized and accelerated the work of some of UW-Madison’s pioneer stem cell scientists, creating jobs along the way. FujiFilm also acquired Wisconsin-based Teramedica a few years back.

FujiFilm Healthcare Americas Corp. also invests in digital radiography, endoscopy, ultrasound, health care IT, contract development and manufacturing, regenerative medicine and drug development.

## **GENE-SILENCING DRUGS IN THE WORKS**

Arrowhead Pharmaceuticals is expanding in the Madison area, developing “gene silencing” drugs through its novel RNAi platforms.

Pipeline products hold potential for treatment of liver diseases associated with alpha-1 antitrypsin deficiency; hypertriglyceridemia; dyslipidemia and dyslipidemia cystic fibrosis; facioscapulohumeral muscular dystrophy; uncontrolled gout; muco-obstructive or inflammatory pulmonary conditions; and idiopathic pulmonary fibrosis.

## **UW-EAU CLAIRE AND MAYO CLINIC FORM UNIQUE PARTNERSHIP**

A multi-pronged approach to boosting health education, delivery and outcomes is underway in northwestern Wisconsin.

With partners that will include the UW-Eau Claire, the Mayo Clinic Health System, nearby communities, school districts and entrepreneurs, the effort will lever a \$9.4-million state grant to increase the number of nurses, nurse educators, other high-skill health workers, young teachers and a new category of “health coaches” over three years.

The competitive grant to launch the program came from the Wisconsin Economic Development Corp. and represents the first pilot project of its kind. WiSys and the Small Business Development Center in Eau Claire are among other project partners.

This is one example of higher education institutions that train medical professionals of all descriptions. Others can be found elsewhere in the University of Wisconsin System, the Wisconsin Technical College System, and throughout the Wisconsin Association of Independent Colleges and Universities.

One nationally known example is the “All Of Us” Research Program, which works with the National Institutes of Health. The Wisconsin “All of Us” consortium includes the School of Medicine and Public Health at UW-Madison, Froedtert and the Medical College of Wisconsin, the Gunderson Health System and the Marshfield Clinic Health System.

# WHAT DOES QUALITY HEALTH CARE MEAN TO THE STATE ECONOMY?

Wisconsin's hospitals and health care systems helped the state get through COVID-19 with fewer deaths. A Jan. 9, 2023 report by Statista ranked Wisconsin 18th best among the 50 states in COVID deaths per 100,000 people (273), better than any neighboring or Great Lakes state with the exception of Minnesota.

While COVID refuses to disappear, the same kind of quality that helped weather the pandemic continues to benefit the Wisconsin economy. Health care systems are continuing to innovate, to compete for talented staff, becoming more efficient, and offering cutting-edge solutions for patients and the communities they serve.

Those priorities were already in place before the pandemic struck. Now, after an interval where urgency in health care delivery was paramount, hospitals and related health systems in Wisconsin are getting back to the business of providing quality, affordable care across the board.

They must also be more efficient and make effective use of technology, some of which is close at hand.

Here are some reasons why quality health care and superb hospitals can help to sustain and improve the Wisconsin economy.

*1) Wisconsin must attract and retain a skilled workforce. One factor in attracting skilled workers – and keeping them in Wisconsin – is the quality and accessibility of health care. Like affordable housing, relatively stable weather patterns, solid schools and other “quality of life” factors, being able to get health care when needed is important to most workers and their families.*

Wisconsin should be a net “gainer” in the race for talent, not a net “donor” to other states that make more compelling cases to people to live there.

Are state and local taxes part of the answer? Yes, but relatively few people move to a different state exclusively in search of lower taxes. They mostly move for employment and quality of life reasons, which include good schools, public safety, sense of community, housing, environment and health care. People want to live where they can reliably see doctors, nurses and other care professionals close to where they live.

It is a similar equation for health care professionals. They can practice their trades in many places, but most want to be a part of vibrant, safe communities. The race for talent must be won across the board, including health care professionals. What will attract them? Perhaps a marketing campaign aimed at nearby states could repatriate health-care professionals who earned degrees from public and private schools in Wisconsin

*2) In an era when health care systems are increasingly turning to technology for answers ranging from diagnostics to therapeutics to administration, Wisconsin has resources at hand to help fill those needs.*

Leading universities, major and emerging companies, health systems such as Advocate Aurora and private clinics such as Mayo and Marshfield are investing in innovation and helping to transfer it to others. Wisconsin can and should be a net “exporter” of technologies that save and improve lives and which make health care more efficient and effective. That should be a selling point for companies and people seeking to move to Wisconsin or to remain here versus states where innovation is not as valued or easily adopted.

Please see “Homegrown resource” section on Pages 12-13.

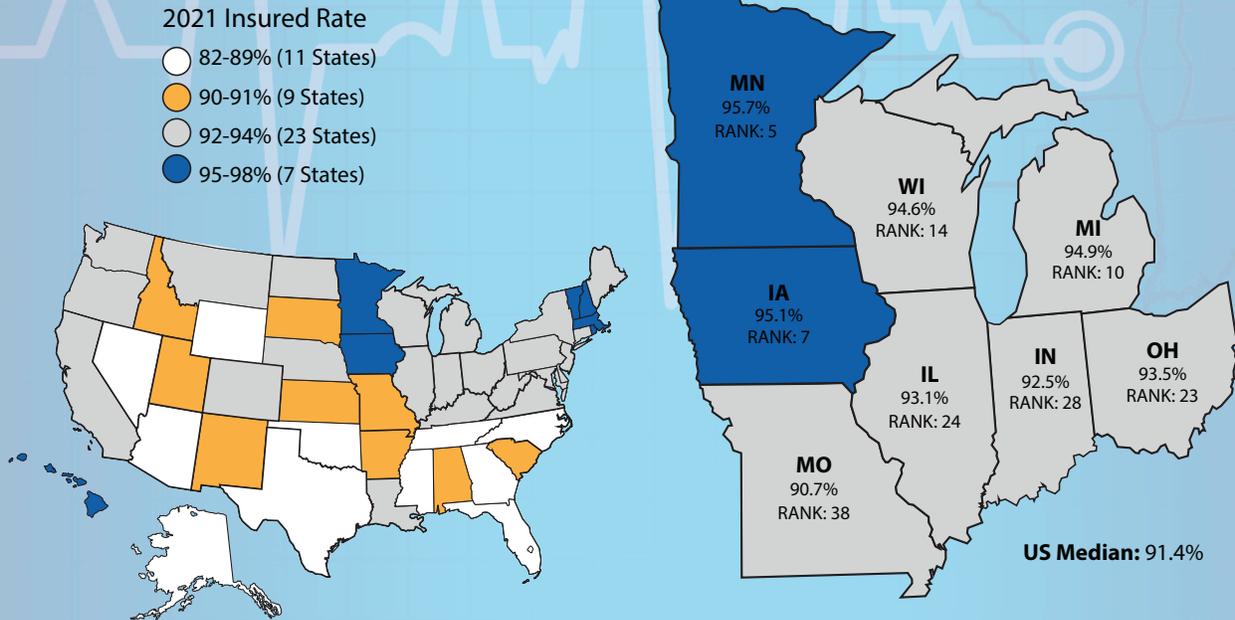
*3) More people are looking for health care solutions that can be delivered outside a clinical setting, and Wisconsin is well-positioned to do so.*

While telehealth visits fell as the pandemic subsided, Wisconsin health systems became very skilled at working on such platforms – and it provides a unique, enduring advantage in hard-to-serve communities and populations. Keeping older patients “in place” versus more expensive long-term settings is enhanced by telemedicine. This trend accelerated during COVID-19's peak and appears here to stay, as many experts predict.

Wisconsin could see more use of telemedicine if there was “payment parity.” Such a law would require that health-care providers are reimbursed the same amount for telehealth visits as in-person visits. During the COVID-19 pandemic, many states implemented temporary payment parity through the end of the public health emergency.

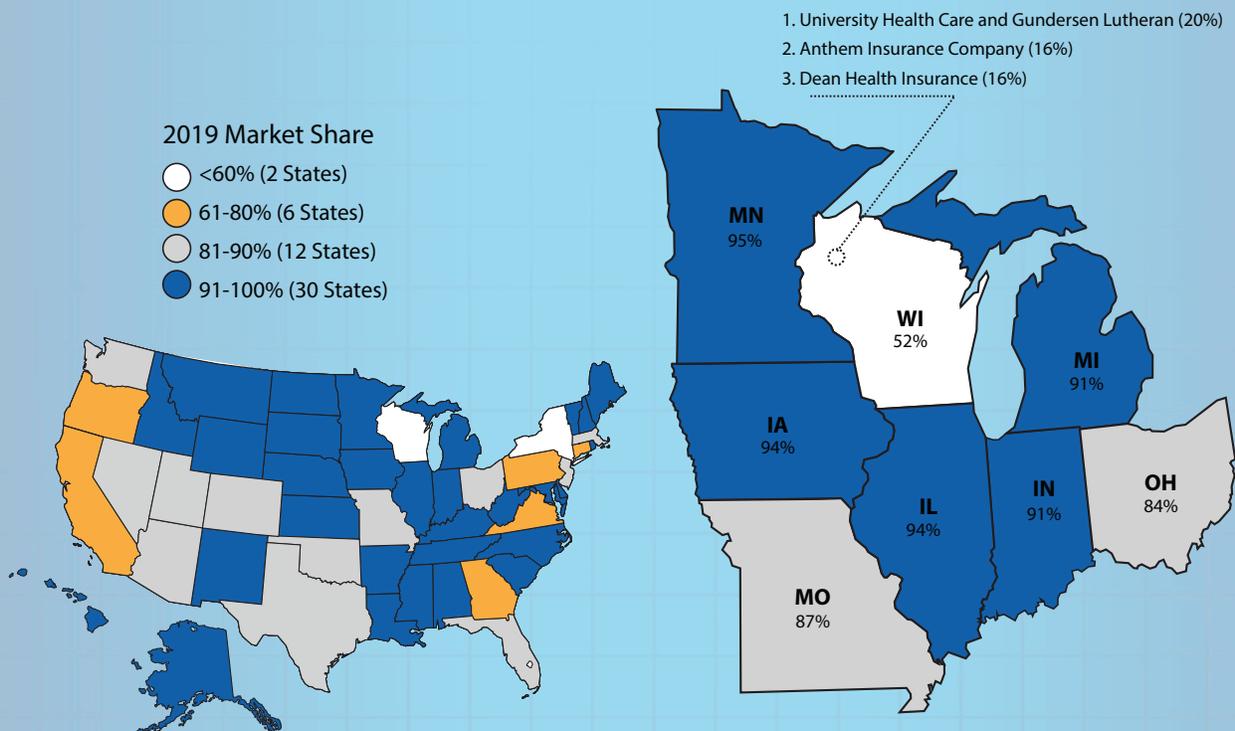
Today, more states are implementing payment parity on a permanent basis. As of December 2022, according to Manatt Health, 21 states have implemented policies requiring payment parity, five states have payment parity in place with caveats, and 24 states – including Wisconsin – have no payment parity.

# Health Insurance Coverage Of The Total Population



Source: 2021 Health Insurance Coverage of the Total Population | Kaiser Family Foundation

# Total Market Share Of Largest Three Insurers



KFF analysis of data from the California Department of Managed Healthcare and SHCE data from [Health Coverage Portal TM](https://www.markfarrah.com/products/health-coverage-portal/), a market database maintained by Mark Farrah Associates, which includes information from the National Association of Insurance Commissioners.

# WHAT DOES QUALITY HEALTH CARE MEAN TO THE STATE ECONOMY?, cont.

*4) Rural Wisconsin's economy would find itself in much deeper trouble if not for the quality and availability of rural hospitals and related systems.*

The Marshfield Clinic is a leading example with its networks in northern and western Wisconsin, but other examples abound. Rural hospitals are providing quality care and providing economic and social “glue” for many communities across Wisconsin. Employers look for many factors when they are considering expansion or opening a new facility, including decent housing for workers, good schools for their children, safe streets and a reliable infrastructure. They also look for quality health care nearby. Rural Wisconsin cannot hope to attract or retain employment centers without it.

*5) At a time when mental and behavioral health needs are increasing across society, hospitals and health systems in Wisconsin are part of the solution.*

There are many examples where hospitals and health systems in Wisconsin have stepped forward to provide emergency or urgent care for people suffering mental or emotional anguish. That is part of a larger problem: Hospitals and health systems have been increasingly asked to take on the role of public health agencies. That problem is contributing to costs and wear-and-tear on hospitals. Regardless, hospitals and health systems are holding the line when it comes to mental and behavioral health, especially in Milwaukee County, where the Mental Health Emergency Center is the result of partnership between Advocate Aurora Health, Ascension Wisconsin, Children's Wisconsin and Froedtert Health.

[Please see a sidebar on Page 4.](#)

## Part of quality in health care involves community partnerships

By working with private companies, schools, non-profit groups and more, Wisconsin hospitals help to create an environment in which people and communities can thrive. Here are a few examples.

**SSM Health** hospitals in Wisconsin are collaborating with community partners to improve health access for elderly residents, students and others. One of these efforts, called the YScreen program, brings mental health resources to local schools to conduct risk assessments for unhealthy behaviors ... including self-harming behaviors.

**Organic Valley and Vernon County Hospital** continue to evolve an employee wellness program, with strong health improvements shown over time.

Through a partnership with local companies, **Stoughton Hospital** is reducing costs for its food services division and enhancing the quality of nutrition for patients, providers and visitors alike.

In northern Wisconsin, **Spoooner Health** acts as an anchor for its small rural community as both the largest employer and main provider of health services. It is a major source of emergency care in the region, hosts health fairs for residents and tourists alike, and helps local colleges train students for the health industry.

**Bellin Health** partners with many area employers in northeast Wisconsin to improve health outcomes and control costs. Its “Campus Care” program with Northeast Wisconsin Technical College has been a long-term example of Bellin's outreach.

Across the state, **Wisconsin hospitals and health systems** take steps to care for friends, neighbors and families beyond the walls of medical facilities. Through many programs and initiatives, hospitals and health systems contributed about \$2 billion in community benefits and charity care in fiscal year 2022.



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