UNDERSTANDING VALUE:

USING REPRESENTATIVE DATA, CREDIBLE METHODOLOGIES AND PATIENT-CENTERED METRICS TO MEASURE HEALTH CARE PERFORMANCE

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EXECUTIVE SUMMARY

Health care costs are a significant concern for business. They represent a major expense that can change dramatically from year-to-year depending on the employer's claim experience. Employers want transparency and clarity regarding the relative costs of their health care. Policy makers need accurate information to make legislative and regulatory decisions. Voters consistently cite health care costs as one of their top concerns, and premiums are top of mind for consumers during health plan open enrollments.

Numerous studies have compared health care costs in Wisconsin to other regions (Please see Table A1 in the Appendix for a representative list of studies). Credible studies based on sound data can be helpful in providing meaningful insights and advancing health care performance. Conversely, studies with faulty methodologies and/or based on data that is not representative of the market can lead to misperceptions and false conclusions that can misdirect business and policy decisions. As a result, understanding a study's methodology and underlying data is critical to interpreting its results.

For the past 20 years, HCTrends has been reviewing and conducting studies on health care costs, utilization and quality. Through that work, it has identified key variables that can impact study results. In order to ensure valid conclusions, studies should be transparent, clearly defined and use data sets that are appropriately aligned with the study's objectives. Data sets should be accessible, accurate, clearly defined and properly segregated.

Many studies of health care costs focus solely on unit price, ignoring utilization, which is a measure of how many medical services are used. Low-price providers may use more medical services than high-price providers leading to an overall higher cost of care. Similarly, studies that focus solely on utilization ignore the importance of unit price. Both must be considered, but no study truly representative of Wisconsin's statewide health care market has been able to accomplish this. Health care premiums can be used as a proxy because they include both unit price and utilization.

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Sophisticated payers, including Medicare, further understand there is more to health care than unit price and utilization. Following the lead of Medicare's Value-Based Purchasing Program, a more appropriate approach for measuring health care performance is to consider cost as a component of health care value: **Value = Total health care costs *plus* quality *plus* access.**

Studies and data sets that are representative of providers statewide indicate that:

- Wisconsin's health care community uses 6 to 10 percent fewer medical services than other states while achieving similar or better outcomes
- Wisconsin commercial health care premiums, which can be used as a proxy for total health care costs, have improved over time and are now close to or at the national average
- Wisconsin is consistently in the top tier of states for the quality of health care delivered and access to care

BACKGROUND

Understanding a study's fundamentals is increasingly important in the internet-era when study conclusions can be published without context or review. Results used as "click-bait" or promoted by WalletHub and other websites create inaccurate "factoids" that present information out of context or are based on limited data or faulty studies.

Over the past 20 years, employers, providers and networks have asked HCTrends and BSG Analytics™ LLC (BSGA) to review published studies that compared health care costs in Wisconsin to other regions of the country. HCTrends has also conducted and published several studies comparing costs and trends in urban areas (both within the state and nationally).[1] During the process of reviewing and/or preparing these studies, HCTrends has identified variables that need to be taken into account when evaluating the study's results, including sample size, geographic distribution, payer composition and terminology. One recent study, for example, purported to identify statewide averages for 25 states, including Wisconsin, with a data set dominated by commercial claims from just two states – Colorado and New Hampshire. The Wisconsin average was based on one-tenth of 1 percent of the total commercial allowed hospital revenue in Wisconsin and did not include claims from any of the state's major insurers.[2] Large sample sizes are important because the contracted prices paid to providers vary considerably by payer and whether the provider is considered in-network or out-of-network. If the claims data relies primarily on claims from insurers that are not prevalent in the market being analyzed, the results would not be reflective of what area employers are actually paying.

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[1] The studies include: *A Per-Member-Per-Month Comparison of Milwaukee-Area Hospital Systems* (May 2008); *A Claims-Based Comparison of Milwaukee's Health Care Costs with Midwestern Metropolitan Areas* (July 2009); *A Per-Member-Per-Month Comparison of Northeastern Wisconsin Hospitals & Health Systems* (April 2010); *A Claims-Based Comparison of Milwaukee's Health Care Costs with Midwestern Metropolitan Areas* (November 2010); *Updated Per-Member-Per-Month Comparison of Milwaukee-Area Hospital Systems* (January 2011); *A Claims-Based Comparison of Milwaukee's Health Care Costs with Other Metropolitan Areas* (April 2011); *A Claims-Based Comparison of Milwaukee's Health Care Costs with Other Metropolitan Areas* (July 2012); *Measuring the Quality Achievements and Cost Efficiency of Wisconsin Hospitals* (October 2012); *Variations in Treatment Costs and Quality Among 24 Urban Areas* (August 2013); *Measuring the Quality Achievements and Cost Efficiency of Wisconsin Hospitals* (January 2014); *2015 Health System Quality & Resource Efficiency Study* (September 2015); *2017 Health System Quality & Resource Efficiency Study* (March 2017)

[2] *"Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely: Findings from an Employer-Led Transparency Initiative,"* informally known as Rand 2.0

PRINCIPLES OF CREDIBLE DATA & SOURCES

Based on its experience in reviewing and conducting studies, HCTrends identified several basic principles for evaluating data sets and studies.

Credible Data Sources

In order to be credible, data sources should be publicly accessible, accurate, clearly defined and properly segregated.

- ***Accessible**:* Data sources should be publicly available (either free or for a fee) and come from a credible source. If proprietary data is used to validate or supplement a study, the data collector should demonstrate why the data is credible and appropriate for the study.
- ***Accurate:*** The data must be credibly collected and "cleaned" to make sure outliers and other anomalies are removed. Data sets based on surveys must use accepted sampling and randomization methodologies.
- ***Clearly Defined:*** The data universe must be clearly defined. Is it a nationwide, regional, state or local data set? The data set must have sufficient sample sizes representative of the geographic regions being measured and should include multiple years of data. In addition to identifying sample size, the data set should identify its geographic distribution. Does the sample represent the entire state or is it limited to one or two urban areas in the state? Is the average skewed to certain states or regions due to a disproportionate share of the sample size? The data collector should identify the data set's strengths and weaknesses, especially in terms of geographic distribution.
- ***Properly Segregated:*** Data sets that include multiple payer types (commercial, Medicare, Medicaid, for example) should have the capability to segregate payers if necessary. Segregation is critical for cost and efficiency analyses, but less important for quality analyses.

Credible Studies

Studies should be transparent, clearly defined and use a credible data set that aligns appropriately with the study's objectives.

- ***Transparent:*** Studies should provide a detailed methodology that can be replicated by others. There should not be any "black-box" adjustments that cannot be independently evaluated.
- ***Clearly Defined:*** The objectives and terms used in the study must be clearly defined so that accurate comparisons can be made with other studies. For example, what is meant by average? Is a state average geographically representative of the state or is it based on a select number of geographic areas within the state? Are the amounts being compared billed charges, allowed amounts or paid amounts? Billed charges are "retail" prices that seldom reflect the actual prices purchasers pay (similar to the invoice on a car). Allowed amounts are the prices actually paid based on discounts negotiated with providers. Allowed charges include both the amount paid by the health plan and any cost-sharing paid for by the plan member. Paid amounts are the prices paid directly by the payer (employer or insurer); they do not include any out-of-pocket costs paid by the member.

- ***Aligned with Data Set:*** The study must use a data set that appropriately aligns with the study's objectives, especially in regard to sample size, distribution and payer mix (commercial, Medicare and Medicaid). The payer-mix distribution should be clearly defined and segregated when necessary.

HOW DO WISCONSIN HEALTH CARE COSTS COMPARE WITH OTHER STATES?

As noted above, making meaningful comparisons is dependent on aligning a credible, accessible and appropriate data source with a study having clearly defined objectives and a transparent, replicable methodology.

HCTrends was unable to identify a study that provided a credible statewide comparison of Wisconsin health care costs to other states. There have been studies that focused on specific urban areas within the state (i.e., Milwaukee) but the sample sizes and payers were not clearly defined. Similarly, some studies purported to be statewide comparisons exclude many of the dominant insurers in Wisconsin, which means the results do not reflect the costs paid by most employers in the state.[3]

HCTrends did identify two studies on health care quality – The Agency for Health Care Research & Quality (AHRQ) State Snapshots and the Robert Wood Johnson Foundation County Health Rankings. Neither analysis provides a direct ranking of states (AHRQ stopped the state rankings in 2018), but both provide uniformly collected data that can be useful for comparisons.

HCTrends identified three data sets that met the credibility standards for examining quality or cost/efficiency:

- Agency for Health Care Research & Quality (Medical Expenditure Panel Survey & quality of care rankings)
- Centers for Medicare and Medicaid Services (Medicare quality and cost-efficiency data)
- U.S. Department of Health & Human Services Public Use Files (federal ACA exchange premiums and user demographics)

A fourth data set – the Wisconsin Health Information Organization (WHIO) All-Payer Claims Database – meets the threshold for providing in-state comparisons and for making limited comparisons of Wisconsin health care utilization with the surrounding states – Minnesota, Illinois, Iowa and Michigan. The data set does contain claim information from almost all states, but the sample sizes are too small to make credible comparisons.

UNDERSTANDING THE COST OF CARE

The traditional formula for calculating the cost of care is as follows:

Utilization x Unit Price = Cost of Care

[3] The Health Care Cost Institute (HCCI) has developed a detailed and transparent methodology, but its data is limited to four insurers – Aetna, Humana, Kaiser Permanente and UnitedHealthcare – that are not dominant in many states. In Wisconsin, the four insurers represent 33 percent of the commercial market, but is mostly in eastern Wisconsin. There is no significant representation in northern, western or south central Wisconsin where provider-sponsored health plans are prevalent.

Many studies focus on either unit price (the price paid for a particular procedure or service) or utilization (the number of health care services provided to treat a disease). Providers with relatively low unit prices may appear to be less expensive, but they may use more unnecessary medical services (MRIs, CT scans, outpatient procedures, etc.) to treat patients, resulting in a higher cost of care. An appropriate comparison of cost needs to incorporate both unit price and utilization.

UTILIZATION

Utilization measures the frequency and intensity of medical resources used to treat patients. In order to do this, all of the claims for all of the medical services provided to treat the disease – from initial diagnosis through the completion of treatment – must be grouped into an episode of care.

Two utilization-focused analyses indicate that Wisconsin providers have better-than average utilization, meaning they achieve similar outcomes using fewer services than the average.

Medicare Spending Per Beneficiary

CMS implemented the Medicare Spending Per Beneficiary (MSPB) measure in FY2015 as part of its Value-Based Purchasing Program (VBP). According to CMS, the VBP program is designed "to provide financial incentives to hospitals based on their performance on selected quality measures. By measuring the relative cost of care through the MSPB Measure, CMS aims to recognize hospitals that can provide high-quality care at a lower cost. Although CMS can use other measures to determine a hospital's quality of care, the MSPB Measure evaluates each hospital's efficiency."[4]

The MSPB calculates all Part A and Part B payments for services provided to Medicare beneficiaries beginning three days prior to an inpatient admission until 30 days after a patient has been discharged. The payments are price-standardized (to eliminate geographic variations in pricing) and risk-adjusted. Indirect medical education (IME) and disproportionate share payments (DSH) are excluded.

Using the MSPB methodology, CMS has determined utilization at Wisconsin hospitals has consistently been 6-percent lower than the national average (Table 1). In 2018, the most current year for which data is available, Wisconsin ranked in the top quartile of states for utilization efficiency.

Wisconsin's MSPB efficiency score means that if all hospitals in the nation operated with the same efficiency as Wisconsin hospitals and had the same wage-adjustment factor, Medicare would save 6 percent on its inpatient medical costs.[5]

TABLE 1. MEDICARE SPENDING PER BENEFICIARY
(1.00 = National Average; Lower is Better)

Year	Wisconsin	Illinois	Minnesota	Iowa	Michigan
2018	0.94	1.01	0.91	0.93	0.95
2017	0.94	1.01	0.89	0.93	0.96
2016	0.94	1.00	0.91	0.92	0.95

[4] *Frequently Asked Questions (FAQs): CMS Price Standardized, Risk-Adjusted Medicare Spending Per Beneficiary (MSPB) Measure*, May 2020

[5] The financial savings could even be greater if the CMS wage-adjustment index is factored in, because the FY2020 index for all Wisconsin hospitals, except those in the Madison area, have wage indices that range from 2 to 10 percent below the national average. Madison-area hospitals have a wage index that is 6 percent above the national average.

HCTrends Analysis of WHIO data

The Wisconsin Health Information Organization (WHIO) maintains a database that includes more than 70% of commercially insured claims in Wisconsin. Similar to Medicare MSPB's data set, variations due to hospital pricing and geographic region are removed to create a standardized price that effectively measures utilization. The WHIO database is more expansive than the MSPB database because it includes all completed episodes – not just those episodes that include a hospital admission. WHIO is designed to compare resource utilization among Wisconsin health care providers. However, the DM18 commercial data set includes approximately 300,000 episodes from surrounding states, including Minnesota (158,934 episodes), Illinois (82,361 episodes), Iowa (37,585 episodes) and Michigan (18,809 episodes).[6]

Working with BSGA, HCTrends used the WHIO DM18 commercial data set to compare Wisconsin utilization to the surrounding states. That analysis found Wisconsin's utilization was 10 percent lower than the other states analyzed (Table 2). This means commercial payers would pay 10 percent less in Wisconsin than they would in the surrounding states if the unit prices were the same.

TABLE 2. WISCONSIN HEALTH CARE UTILIZATION COMPARED TO THE AVERAGE OF OTHER MIDWEST STATES
1.00 = Other Midwest States Average; Lower is Better

Overall	Hospital	Professional
0.90	0.86	0.93
Hospital includes inpatient, outpatient and ancillary utilization		

HCTrends also compared utilization for some of the most common episode groups for commercial payers. The analysis was limited to conditions for which the data set had a minimum of 2,000 episodes for the surrounding states.[7] Wisconsin providers outperformed the average of the other states in all 12 episode groups (Table 3).

TABLE 3. WISCONSIN HEALTH CARE UTILIZATION COMPARED TO THE AVERAGE OF OTHER MIDWEST STATES
1.00 = Other Midwest States Average; Lower is Better

Episode Group	Episodes*	Aggregate	Hospital	Professional
Acute Bronchitis	4,452	0.94	0.80	1.00
Acute Sinusitis	5,428	0.99	0.77	1.03
Anxiety Disorder/Phobia	5,258	0.80	0.63	0.84
Asthma	4,626	0.83	0.86	0.79
Diabetes	4,761	0.75	0.67	0.89
Hyperlipidemia	5,082	0.89	0.81	0.92
Hypertension	11,448	0.83	0.79	0.88
Joint Degeneration – Back	4,448	0.97	1.03	0.94
Joint Degeneration – Knee/Lower Leg	2,579	0.94	1.06	0.84
Mood Disorder, Depressed	7,544	0.78	0.71	0.80
Routine Exam	31,910	0.99	0.98	1.00
Tonsillitis	14,611	0.99	0.99	0.99
*Total episodes for Midwest states (except Wisconsin)				

[6] The WHIO DM18 commercial dataset includes commercial claims incurred from July 1, 2015 through June 30, 2017. WHIO information is copyrighted and requires a license for its use.

[7] HCTrends and BSGA use a threshold of 20 episodes for their in-state ETG analyses of Wisconsin health providers. It increased the threshold by a factor of 100 for this comparison to better ensure an accurate representation of utilization in the surrounding states; the analysis included inpatient, outpatient, professional and ancillary services.

The prevalence of integrated health care delivery systems in Wisconsin might be a factor in the state's relatively efficient use of medical services. In many states, primary care physicians and hospitals provide services independently of each other. Integrated health care delivery brings primary, specialist, outpatient and inpatient care into a single, unified health system that can coordinate care. A 2019 BSGA analysis of eastern Wisconsin health systems found that the resources used to treat episodes that were wholly or mostly contained within an integrated system were 3 percent to 7 percent lower than medical services used in non-integrated settings. This could be because of integrated delivery systems' ability to reduce duplication of services and develop best-practice treatment protocols, but additional study would be necessary to confirm this.

UNIT PRICE

Employers often focus on unit price because they intuitively assume lower unit prices translates into low-cost care. Unit-price comparisons measure the price for a service – an X-ray, office visit, MRI or CT scan. Studies have shown that providers in some regions of Wisconsin have higher-than-average unit prices, but the analyses have been limited in both geographic scope and the payers involved.

Unit-price comparisons would appear to be relatively straightforward, but they are actually more challenging because the results are highly dependent on the claims included in the data set. Discounts among insurers vary considerably based on their negotiations with health care providers. Unit prices will also vary depending on whether a health care provider is in or out of network. For these reasons, unit price analyses should include multiple payers and be representative of the commercial insurance market in the state.

There are issues with unit-price methodologies as well. They typically sum the commercial claims and then use Medicare weights to adjust for the intensity of medical services provided. Medicare weights, however, are based on the estimated relative intensity of services needed to treat Medicare – not commercial – patients. An elderly patient with pneumonia, for example, will typically require more inpatient services than a 45-year-old covered by his or her employer's insurance. Similarly, Medicare has very few patients who incur one of the most common commercial inpatient stays – childbirth.

A more appropriate unit-price methodology would be to compare allowed dollars for a market basket of the most common inpatient admissions, outpatient visits and physician procedures. Comparing allowed amounts for the 20 most-frequent inpatient admissions (DRGs), 50 most frequent outpatient visits (APCs) and 50 most frequent professional procedures (CPTs) would provide meaningful "apples-to-apples" comparisons of health care costs.

HEALTH CARE PREMIUMS: MEASURING THE TOTAL COST OF CARE

Health insurance premiums can serve as a proxy for cost of care because they incorporate both utilization and unit price. Several things have to be considered when using premiums as a proxy. Premiums can vary based on the relative risk of members in the plan, especially in small groups. Premiums include insurer margins, which can vary by state depending on mandated coverages, the insurer's market position and the insurer's strategic objectives in that market. Premiums also vary based

on plan design. The credibility of premium-based comparisons is determined by how well these variables can be held constant.

HCTrends conducted two premium comparisons – one using the Medical Expenditure Panel Survey conducted by the Agency for Healthcare Research and Quality (AHRQ) and one using premiums from the ACA federal exchanges.

Medical Expenditure Panel Survey (MEPS):

MEPS is a randomized annual survey of more than 43,000 employer establishments that is conducted annually. Its 2020 survey indicates Wisconsin's combined premium was 0.4% below the national average in 2019 (Table 4) and within 2 percentage points of all of the surrounding states except Iowa (Table 5).[8] MEPS does not adjust premiums for plan design, but Wisconsin's average plan design was close enough to the national average that any impact would be slight. Wisconsin's average deductibles were 7 percent above the national average, but the dollar amount was low relative to the total premium. Wisconsin's average out-of-pocket maximums, which have a greater impact on premium, were at the national average.

TABLE 4. WISCONSIN PREMIUM COMPARED TO NATIONAL AVERAGE

Plan Type	Premium			Deductible			Out-of-Pocket Max		
	WI	U.S.	Difference	WI	U.S.	Diff	WI	U.S.	Diff
Single	$7,001	$6,972	+0.4%	$2,061	$1,931	+$130	$4,492	$4,476	+$16
Family	$20,345	$20,486	-0.7%	$3,904	$3,655	+$249	$8,547	$8,534	+$13
Combined*	$13,299	$13,351	-0.4%	$2,931	$2,745	+$190	$6,406	$6,391	+$15

*52.8% single coverage and 47.2% family coverage

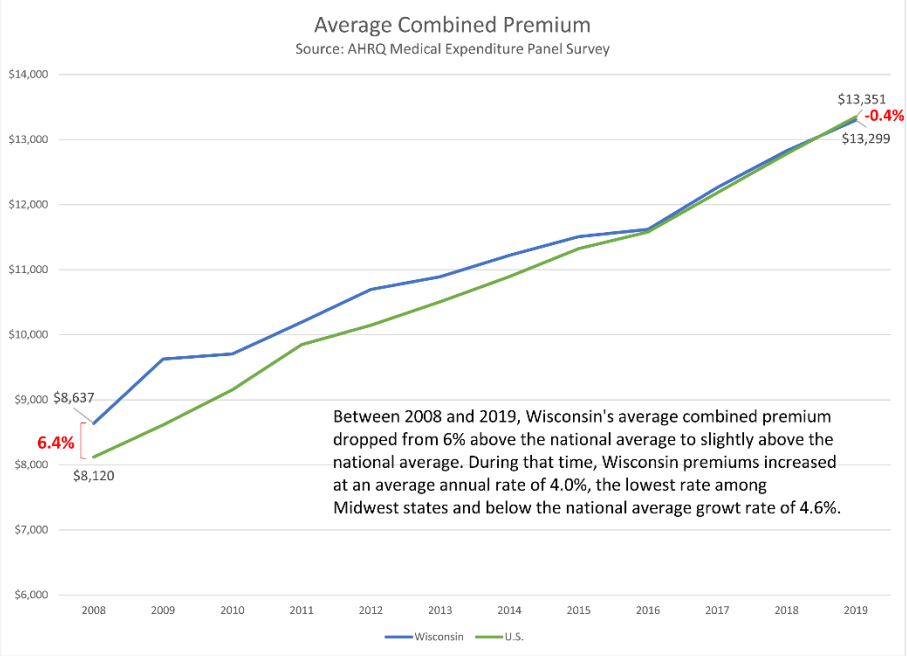
TABLE 5. WISCONSIN PREMIUM COMPARED TO SURROUNDING STATES

Plan Type	Wisconsin	Minnesota		Illinois		Iowa		Michigan	
	Premium	Premium	WI to MN	Premium	WI to IL	Premium	WI to IA	Premium	WI to MI
Single	**$7,001**	$6,904	+1.5%	$7,157	-2.2%	$6,657	+5.2%	$6,705	+4.4%
Family	**$20,345**	$20,751	-2.0%	$20,659	-1.6%	$18,752	+8.4%	$20,425	-0.4%
Combined	**$13,299**	$13,440	-1.1%	$13,530	-1.7%	$12,366	+7.5%	$13,181	+0.9%

*52.8% single coverage and 47.2% family coverage

[8] Based on Optum benchmarks: 52.8% of employees having single coverage and 47.2% of employees having family coverage. Wisconsin's average single premium was 0.4% above the national average and its family premium was 0.7% below the national average. Average deductibles in Wisconsin were 7% percent above the national average and its out-of-pocket maximum was at the national average.

The MEPS survey also highlighted Wisconsin's progress in closing the premium gap over the last eight years. Between 2012 and 2019, the combined premium for Wisconsin employers narrowed from 6.4% above the national average to 0.4% below the national average.



ACA Federal Exchange

The ACA Federal Exchange Public Use Data File includes premium data for 6.9 million enrollees in federally run exchanges. ACA-compliant plans must have similar plan designs and medical-loss ratios, which help to standardize comparisons.

HCTrends analyzed the public-use files that are published annually with information about the insurance plan sold through the ACA exchange. The data provides an overall average, as well as average premiums by plan type (platinum, gold, silver or bronze) and by whether the plan was a first-time purchase, member-selected renewal or auto-renewal, and whether the user insurance was a first-time purchase, a manual renewal or an auto-renewal. In addition, the ACA data breaks down participants by age bracket, which also makes it easier to compare costs.

In 2020, the average Wisconsin premium in the ACA is $657 per month, which is 10.4 percent higher than the national average ($595)[9]. However, the ACA data also shows that Wisconsin has a significantly higher proportion of people in the 55-64 age group, which has the highest per-capita medical costs among commercially insured people. Wisconsin also has significantly fewer people than the national average in the 18-25 age group, which has the lowest per-capita medical costs[10]. This distorts the Wisconsin average because insurers are allowed to set premiums for the older age group at a rate that is between 2.2 and 3.0 times higher than the rate for a 24-year-old. When the premium is normalized to account for Wisconsin's over-representation in this age group, Wisconsin's ACA premiums are 1 percent above the national average.

[9] 2020 OEP State-Level Public Use File

[10] Of the ACA plans purchased in Wisconsin, 42% were for people 55 to 64 years of age, which was the third-highest percentage in the country and 35% above the national average. Similarly, 8% of the plans were purchased by 18- to 24-year-olds, the seventh-lowest percentage in the country and 29% below the national average.

HCTrends also attempted to compared Wisconsin's ACA premiums with the surrounding states but the variations were too great to be credible. Minnesota and Michigan had significantly lower ACA premiums ($407 and $456, respectively) but they also had significantly higher shares of bronze-medal plans, which have low premiums and high out-of-pocket costs.[11] Iowa's ACA premiums were considerably higher than the other states ($768), but the state lacks a re-insurance program that would lower premiums.

UNDERSTANDING VALUE: ADDING QUALITY AND ACCESS

Sophisticated payers understand that there is more to health care than unit price and utilization. Patient outcomes, the quality of care delivered, the ability to access care and the patient's experience all play a key role in determining the value of the care provided. One of the key elements of the Affordable Care Act was the development of Medicare's Value-Based Purchasing Program, which moves beyond unit price and utilization by providing financial incentives to reward hospitals that have superior quality and outcomes.

Quality includes multiple components:

- The quality of the clinical care provided
- Access to care
- Patient experience

Wisconsin has consistently ranked among the top five states in terms of the quality of health care provided based on annual analyses conducted by the Agency for Healthcare Research and Quality (AHRQ).[12] This has been accomplished through provider-led quality initiatives and the financial stability of the state's health systems. A 2019 analysis found "strong evidence" that "financially stable hospitals have better patient experience, lower readmission rates and show evidence of decreased risk of adverse patient quality and safety outcomes for both medical and surgical patients."[13]

Since 2012, HCTrends has compared quality measures for Wisconsin health systems to a national average using more than two dozen quality measures developed by CMS. The most recent analysis (January 2020) included 30 measures and found that the aggregate quality for Wisconsin hospitals is 3 to 6 points higher than the national average in all of the categories evaluated and 4 points higher overall.[14] Wisconsin also outperformed the majority of the surrounding states in all of the quality categories, including overall quality (Table 6).

[11] Bronze plans accounted for 54% and 48% of the ACA plans sold in Minnesota and Michigan, respectively. That compared to 43% of the plans sold in Wisconsin, 41% of the plans sold in Illinois and 23% of the plans sold in Iowa.

[12] Wisconsin ranked fourth nationwide and top in the Midwest in 2018, which was the last year AHRQ published state-by-state rankings.

[13] *Correlation between hospital finances and quality and safety of inpatient care*, Akinleye DD, McNutt L-A, Lazariu V, et al (PLOS One, 2019, 14(8): e0219124)

[14] The CMS hospital measures include – **Patient Outcomes:** 30-day mortality - heart attack, heart failure and pneumonia; 30-day readmits – hip/knee, heart attacks, heart failure, pneumonia and all-cause; complications hip/knee and unplanned colonoscopy readmits; **Patient Safety:** Hospital-Acquired Infections – CLABSI, CAUTI, C-Diff and MRSA; collapsed lung (PSI 6), post-operative hemorrhaging (PSI 9), post-operative sepsis (PSI 13), post-operative blood clots (PSI 12), accidental cuts & tears (PSI 15) and avoidable deaths due to surgical complications (PSI 4); **Patient Experience**: doctors always explain information well, nurses always explain information well, patients strongly understood their medications, responsibilities and discharge instructions; and **Process Measures:** appropriate care for sepsis and shock, appropriate elective deliveries, appropriate intervals between endoscopies/colonoscopies, appropriate cardiac imaging for low-risk procedures, and appropriate use of contrast with abdomen CTs.

TABLE 6. MIDWESTERN STATES VS. NATIONAL AVERAGE 1.00 = National Average; Higher is Better					
	Wisconsin	**Illinois**	**Minnesota**	**Iowa**	**Michigan**
Patient Outcomes	**1.03**	1.00	1.03	1.02	1.00
Process Measures	**1.05**	1.02	0.97	1.13	1.04
Patient Experience	**1.04**	1.06	1.02	0.97	0.97
Patient Safety	**1.06**	1.01	1.06	0.99	1.05
Aggregate Score	**1.04**	**1.01**	**1.03**	**1.02**	**1.01**
*1.00 = National Average; Higher is Better					

Patient experience is an especially important evaluation because it measures both satisfaction and patient engagement. HCTrends uses five patient experience measures related directly to the care provided. Two measure the ability of doctors and nurses to clearly explain the treatment and answer patient questions. The remaining three measure how well the patient understood the directions they were given regarding the medications they received and their responsibilities after they left the hospital. HCTrends believes these are the most important patient experience measures because they have the most impact on outcomes. Numerous studies have shown improved outcomes, fewer complications and lower hospital readmissions when patients understood their medications, the doctor's care plan and their self-care responsibilities when they were discharged from the hospital. A 2011 Commonwealth Fund Survey that looked at health care delivered in 11 countries found that "across countries, engaged patients reported receiving higher-quality care, fewer errors, and more positive views of the health system."[15]

The Robert Wood Johnson annual County Ranking Reports look at more than two dozen measures to compare the relative health of county populations in different areas of the country. In the 2020 report, Wisconsin outperforms the national average in several key areas (Table 7).[16]

TABLE 7. WISCONSIN COMPARED TO NATIONAL AVERAGE			
Measure	**U.S. Average**	**Wisconsin**	**Comments**
Preventable Hospitalizations	4,535	3,940	Wisconsin 14% better than national average
Avoidable Premature Deaths	6,900	6,400	Wisconsin 10% better than national average
Number of Residents Per Primary Care Provider	1,330	1,270	Wisconsin 6% better than national average
Percent of People Uninsured	10%	6%	Wisconsin 59% better than national average
Mammography Screenings	42%	50%	Wisconsin 22% better than national average
Flu Vaccinations	46%	52%	Wisconsin 16% better than national average

[15] *International Perspectives on Patient Engagement: Results from the 2011 Commonwealth Fund Survey*, Robin Osborn and David Squires (March 29, 2012). See also *Effectiveness of Strategies for Informing, Educating and Involving Patients: An Overview of Systemic Reviews*, Angela Coulter and Jo Ellins, Picker Institute of Europe (July 7, 2011)

[16] Measurement explanations – Preventable hospitalizations: Rate of hospital stays per 100,000 Medicare enrollees for care that could have been provided in ambulatory-care settings (a lower number is better); Avoidable premature deaths: Years of potential life lost before age 75 per 100,000 population (age-adjusted, lower number is better); Number of residents per primary care provider: Ratio of population to primary care physicians (lower number is better); Percent of people uninsured: Percentage of population under age 65 without health insurance (lower number is better); Mammography screenings: Percentage of female Medicare enrollees ages 65-74 that received an annual mammography screening (higher number is better); Flu vaccinations: Percentage of fee-for-service Medicare enrollees that had an annual flu vaccination (higher number is better).

When compared to surrounding states – Wisconsin also outperforms the majority of the surrounding states in four of the six measures (Table 8).

TABLE 8. WISCONSIN COMPARED TO SURROUNDING STATES					
Measure	**Wisconsin**	**Minnesota**	**Illinois**	**Iowa**	**Michigan**
Preventable Hospitalizations	3,940	6,015	5,092	3,808	5,203
Avoidable Premature Deaths	6,400	5,300	6,700	6,200	7,600
Number of Residents Per Primary Care Provider	1,270	1,121	1,250	1,370	1,280
Percent of People Uninsured	6%	5%	8%	5%	6%
Mammography Screenings	50%	46%	43%	51%	44%
Flu Vaccinations	52%	50%	46%	53%	46%

Wisconsin also provides good access to care. Wisconsin has 100 rural health clinics and 58 critical access hospitals serving the less-populated areas of the state. In August 2020, the Health Resources and Services Administration (HRSA) ranked Wisconsin's critical access hospitals third in the nation in terms of quality performance. The ranking is based on the performance of hospitals in its Medicare Beneficiary Quality Improvement Project, which works with more than 1,350 small hospitals in 45 states.[17] Another analysis, compiled by the Wisconsin Office of Rural Health, estimated that 92% of the state's residents could access an emergency department within 20 minutes and 62% could access an emergency department within 10 minutes.[18]

Wisconsin has a high percentage of physicians who serve Medicaid patients, another important indicator of access given the state's relatively low reimbursement rates. In 2016, the most current year for which comparative data is available, Wisconsin physicians serving Medicaid patients were reimbursed at a rate that was 62 percent of what they received for Medicare patients. This was significantly below the national average of 72 percent. The state's primary care physicians fared even worse. They received 48 percent of Medicare reimbursement, compared to the national average of 66 percent.[19] Nonetheless, 70 percent of primary care providers were active Medicaid providers, which meant they were seeing a minimum of 26 Medicaid patients, according to an analysis conducted by the Wisconsin Department of Health Services.[20] The analysis also found that 79 percent of children and 80 percent of adults enrolled in Medicaid utilized primary care services in 2014, an indication that their access to care was not limited.

CONCLUSION

Health care costs are a major – and sometimes volatile – employer expense. Businesses and policymakers want information they can use to assess the value of care provided. Unfortunately, the limited availability of publicly accessible commercial claim data sets, variations in sample sizes and definitions, and non-transparent methodologies make it difficult to make accurate comparisons.

[17] *Ten States Receive 2020 Top Performing State Awards,* HRSA eNews, Aug. 6, 2020 (www.hrsa.gov)
[18] Wisconsin Office of Rural Health 2017
[19] Medicaid-to-Medicare Fee Index, Kaiser Family Foundation, 2016 data, accessed from www.kff.org
[20] *Medicaid Plan for Monitoring Access to Fee-for-Service Health Care* (Draft), (Wisconsin Medicaid Program, August 15, 2016)

Total health care costs combine unit prices and the medical services utilized. Both of these can be measured relatively easily provided the data set and methodology meet the criteria outlined above. They are also the metrics most easily understood by the business community.

Quality is also of critical importance. In its analyses, HCTrends uses 56 quality measures – 30 focused on hospital performance and 26 focused on medical group performance. When viewed in totality, these measures provide an indication of the provider's commitment to quality. Wisconsin consistently outperforms the national average in quality achievements.

Access also demonstrates provider commitment and should theoretically improve outcomes by making medical care available to rural, underserved locations; however, HCTrends has not identified any studies that prove this.

When using data that provides the most comprehensive statewide picture of health care, Wisconsin's overall commercial costs are in line with the national average, its quality has been consistently ranked in the top 10 percent of states and it offers superior access to traditionally underserved populations.

Following the lead of Medicare's Value-Based Purchasing Program, a more appropriate approach would be to consider total health care cost as a component of health care value:

Value = Total health care costs *plus* quality *plus* access

Health care payment is rapidly evolving from a unit-price focus to a value-based approach that takes into account patient outcomes and quality. Data sets and studies should be designed to measure the effectiveness of this transition and to identify opportunities for improvement.

APPENDIX

TABLE A1. STUDIES COMPARING WISCONSIN HEALTH CARE COST TO OTHER STATES OR REGIONS				
STUDY	**DATE (SPONSOR)**	**DATA SOURCE**	**FINDINGS**	**COMMENTS**
Health Care Cost Institute (HCCI)	• Reports released annually since 2011	• Claims from four commercial insurers (Aetna, Humana, Kaiser Permanente and UnitedHealthcare); 2020 Report (2018 Data) included 41.5 million lives. Of that amount, about 2% are Wisconsin lives (DRG analysis).	• Has consistently shown Wisconsin unit prices are above average, but utilization of services is below average • Most recent analysis provides unit price and utilization information, but does not compare it to a national average • A credible national average cannot be calculated because it is unknown how large sample sizes are in other states	• Does not include data from Wisconsin's provider-sponsored plans prevalent outside of Milwaukee or Anthem/Blue Card • A single insurer, UnitedHealthcare, represents approximately 76% of the members included in the sample
Milliman Medical Price Indices	• Has published annual indices since 2005 • Interactive tool allows comparisons of urban areas	• Claims data is trended forward using estimated trend rates to create current year rate (i.e., 2020 rate is based on 2018 actual claims trended forward to 2020) • Claim source identified only as employer group plans representing 62 million lives	• All 10 of the MSAs in Wisconsin included in the interactive index show identical results – that health care costs are 7 percent above the national average	• Inability to differentiate costs in Wisconsin MSAs an indication of small sample sizes • The geographic distribution of the Wisconsin sample is not known
Rand Studies	• Rand 1.0 (2017): Primarily focused on Indiana hospitals • Rand 2.0 (2019): Reported results on 24 states, but only one state (Colorado) represented more than $1 billion in commercial claims and, in 19 states, commercial claim volume was less than $100 million	• Rand 2.0: 4 million commercial lives, 50% of which came from the Colorado and New Hampshire All-Payer Claims Databases; Other data sources include self-insured employers (1.2 million lives) and health plans (800,000 lives) primarily from Indiana, Michigan, Massachusetts, New Mexico, Ohio and Texas	• Rand 2.0: Wisconsin hospital inpatient prices were 218% of Medicare, outpatient prices were 366% of Medicare, and total hospital prices were 279% of Medicare	• Limited data likely not reflective of actual costs paid by Wisconsin employers; commercial volume included in the study represented a very small sample of state's total commercial volume ($8 million or 0.1% of total commercial volume) • DRG Medicare pricing calculated by using Medicare weights, which are different than resource weights that would be applied to commercial payers (due to age of populations)
HCTrends Studies	• Multiple studies conducted by HCTrends based on claims data from 2007 through 2011	• July 2009 study: Based on commercial claims incurred in 2007 by self-funded employers in 10 Midwestern cities, including Milwaukee • November 2010 study: Based on commercial claims incurred in 2009 by self-funded employers in 12 Midwestern cities • April 2011 study: Analyzed health care	• July 2019 study: Milwaukee-area costs were 10 percent higher than the Midwest Average in 2007 • November 2010 study: Milwaukee-area costs were 5 percent higher than the Midwest Average in 2009 • April 2011: Milwaukee costs were 7 percent	• Studies were not statewide • Analysis included dominant carriers in Milwaukee region • Not known how representative the samples were for other regions compared

		costs in 20 metro areas based on 2009 claims paid by self-funded employers and contributed by multiple carriers (the analysis was expanded to include cities that compete with the Milwaukee Region for jobs) • July 2012 study: Analyzed health care costs in 24 cities considered economically competitive with Milwaukee using 2009 and 2010 claims data from self-funded employers • August 2013 study: Compared quality, cost and healthcare utilization for 24 cities using episode treatment groups (ETGs) assembled from 2009, 2010 and 2011 claims in the Optum impact database	above the 20-city average in 2009 • July 2012 study: Milwaukee health care costs 3 percent above other midwestern Metropolitan areas, 2 percent above the national average and 6 percent above the 24-cty average • August 2013 study: Milwaukee was one of three cities in the 24-city analysis to have below-average treatment costs and above-average compliance with treatment protocols; Milwaukee's costs were 1 percent below the average of the 24 cities analyzed and its quality was 2 percent above the 24-city average	
Mercer Study	• 2003 (Greater Milwaukee Business Group on Health)	• 1999 and 2000 medical claims from 103,000 employees at two dozen companies) using the business group's health plan	• Milwaukee employers pay 55% more for health care costs per employee than the Midwest average, most of which (44%) due to generous plan designs. • Health care costs were 31% higher than the Midwest average	• Study limited to business health care group's members • Estimated per-employee costs did not align with state-collected HMO data • Estimated discounts and per-inpatient-day costs did not align with Wisconsin Hospital Association fiscal surveys • Study results were more likely a reflection of plan performance rather than market average • Not a statewide study
Milwaukee Health Care Spending Compared to Other Metropolitan Areas	• 2004 (General Accounting Office)	• 2001 Claims from the Federal Employees Health Benefits Program	• Milwaukee spending was 27% higher than the national average • Inpatient prices 63% higher than the national average • Physician prices 33% higher than the national average	• Federal employees represent relatively small sample size (<25,000) and plan design might not be representative of the market

TABLE A2. DATA SOURCES				
DATASET	**PAYER**	**SIZE**	**FINDINGS**	**COMMENTS**
CMS Medicare Spending Per Beneficiary	Medicare	Includes hospital claims for the 40 million people enrolled in Medicare's fee-for-service program	• Wisconsin Medicare Spending Per Beneficiary is 6% below the national average (2018 data)	• Because it includes all costs for a hospitalization and is based on RVRVS, it provides a measure of utilization in addition to relative costs • Includes hospital spending for participants in Medicare Fee-for-Service Programs • Does not include data from Medicare Advantage, which represents an increasing percentage of total Medicare participants (33% in 2018)
Kaiser Family Foundation (Health Benefits Survey)	Commercial	2,012 randomly selected firms nationwide (2019)	• No state-specific information	• Drilldowns only to the regional level (Midwest, Northeast, etc.)
Medical Expenditure Panel Survey	Commercial	43,000 randomly selected business establishments and 3,200 government units nationwide (2019)	• Wisconsin costs at the national average (2019)	• Survey conducted annually by the Agency for Healthcare Research and Quality (AHRQ) • Information available at the state level and for select metropolitan areas (In Wisconsin, two subgroups are provided – Milwaukee-Waukesha MSA and "remainder of state")
ACA Exchange	Commercial	6.9 million federally run ACA participants (2020); 184,401 ACA participants in Wisconsin	• Wisconsin age-adjusted average insurance premium 1% above average	• ACA structure allows for comparison of premiums with similar benefit plan designs • Premiums not adjusted for age. In 2020, Wisconsin has the third-highest percentage of people 55-64 years of age (35% higher than national average) and the seventh-lowest percentage of people 18-25 years of age (29% lower than the national average) • Does not consider state-specific initiatives that might affect premium rates
Truven Health Analytics (IBM Watson)	Commercial (Self-funded employers)	43.6 million members (2016)	• Varies by study	• Sample size, geographic composition and contributors not known
WHIO	Commercial, Medicare Advantage, Medicaid	4.2 million covered commercial, Medicare and Medicaid lives (DM19)	• Wisconsin-only data; no national comparisons available	• Actual prices converted to standard price, which allows for utilization comparisons

TABLE A3. DATA AGGREGATORS/PUBLISHERS		
SOURCE	**WEBSITE**	**COMMENTS**
The Commonwealth Fund	**www.commonwealthfund.org**	• Publishes issue briefs, case studies and charts on a variety of health care related topics including: ACA, COVID-19, health care coverage and access, health care delivery reform, health insurance marketplaces, health system performance and costs, high-need, high-cost patients, international innovations, Medicaid expansion, Medicare, prescription drugs, state health policy and Medicaid and vulnerable populations
Kaiser Family Foundation	**www.kff.org**	• Publishes issue briefs and charts/tables on a variety of health care related topics including: COVID-19, health care disparities, global health policy, health costs, health reform, HIV/AIDS, Medicaid, Medicare, private insurance, uninsured and women's health policy
WalletHub	**www.wallethub.com**	• Personal finance website owned by Evolution Finance (formerly CardHub) • No health data on site; pushes random health, economic and quality-of-living stats as a promotional tool to advertise site