



BHCG-GNS Healthcare Physician Value Study Symposium

December 8, 2021

MEETING AGENDA

- **Opening Remarks** – Jeffrey Kluever, Executive Director, Business Health Care Group
- **Wisconsin Health Information Organization (WHIO) Overview** – Dana Richardson, Chief Executive Officer, WHIO
- **Physician Value Study Results** – Earl Steinberg, MD, Executive Vice President of Payer and Market Access/HEOR Lines of Business, GNS Healthcare
- **Centivo-GNS Healthcare Value Proposition** – Dave Osterndorf, BHCG Strategic Consultant and Chief Actuary, Centivo
- **Q & A**



**WISCONSIN HEALTH
INFORMATION ORGANIZATION**

Mechanics of a Report

December 8-9, 2021

Business Health Care Group Meetings

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BETTER INFORMATION. BETTER DECISIONS.

Wisconsin Health Information Organization (WHIO)

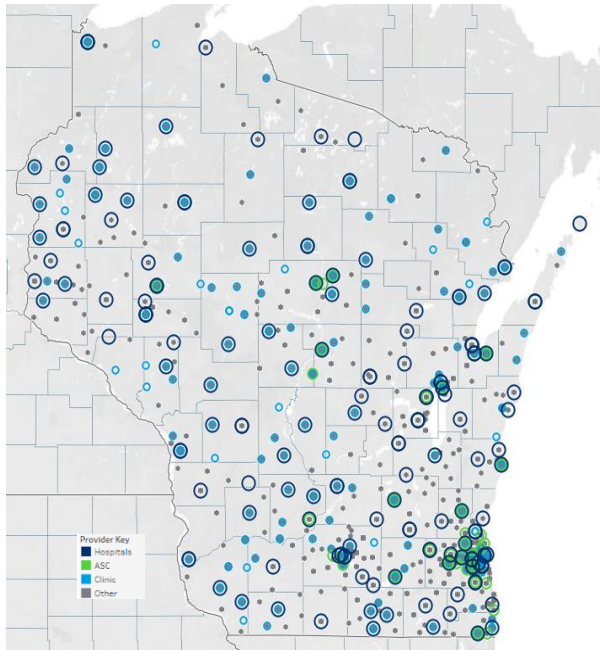
Vision: Better health, health care and health care value gained from objective information.

Mission: To create more health data and better information to advance actions.

The WHIO is Wisconsin's All-Payer Claims Database (APCD) which provides health data and information to all stakeholders that are committed to improving the health of Wisconsinites and the health care delivery system in Wisconsin.

- Provider organizations
- Employers
- State agencies
- Researchers
- The public
- Health plans
- Consultants
- Improvement organizations
- Software developers
- Others

WHIO is the largest health care data and information system in Wisconsin.



Goal: Complete a
frame off restoration
of a 1957 Chevy.

Tools and People



Award
Winning
Custom Built
Hot Rod!

Raw Materials



Reconfiguring the Parts



Attention to Finishing Details



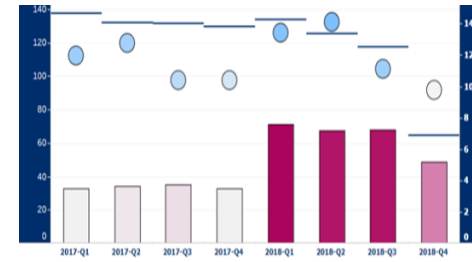
Important report concepts

A report should provide valid information to people who know the details of the business to support decisions that drive actions.

Validity: how accurately a method measures what it is intended to measure

Fit for Purpose: the data should be appropriate for the intended use

1. Intended use
2. Data
- 3a. Groupers
- 3b. Measures and results testing
4. Report format and delivery



2. Data

What is the data source and type?

Wisconsin health plans, self-funded employers and Medicaid's fully adjudicated claims.

Does the data include a representative sample of the population?

WHIO data represents the entire state of WI, about 75% of the population. The data includes all sites of care, all diagnoses and all services paid for by insurance.

Is the data standardized?

Claims data is highly structured using nationally recognized ontologies/code sets. Training and auditing occurs to support the use of these codes sets for payment. The payment detail is now more granular to also support analytics.

Is the data assessed for accuracy?

WHIO data is evaluated for quality at multiple steps throughout the data intake and data set development processes; data submitting organizations receive data quality reports.
WHIO data has 99-100% fill rates for required fields.
WHIO maintains a provider registry that is updated regularly.

Claims data is the gold standard for utilization and cost evaluation.

3a. Groupers

Episode Treatment Groups® (ETG®): Introduced in 1993, ETG identifies clinical episodes of illness and the services involved in their diagnosis, management, and treatment. Episodes are created by collecting all inpatient, outpatient, and ancillary services into mutually exclusive categories. At the patient level, ETG recognizes comorbidities, complications, and treatments that dramatically change the patient's clinical profile, health care utilization, and costs, and enables accurate case mix adjustment. ETG cover both acute and chronic conditions.

Episode Risk Groups® (ERG®): Risk assessment, the measurement of the expected health care cost or utilization of an individual or population, enables the understanding of the health risks to predict the potential medical and pharmaceutical costs associated with those risks. Each ETG has an episode specific severity score that reflects the risk due to a patient's demographics, comorbidities, and condition-specific complications. The incorporation of this severity score into ETG allows for significant differentiation of risk within the same base condition.

Normalized Pricing®: Normalized Pricing is the process of creating a uniform and consistent approach to classifying and pricing all services. This process is designed to remove variations driven by differences in contractual arrangements, geographic regions, timeframes of data, and the health care organizations from which services are provided. The inputs to the Normalized Pricing process include information readily available from health care medical and pharmacy claims and encounter data, including procedure and diagnosis codes.

Evidence Based Measures® (EBM®): EBM consists of over 700 evidence-based guideline measures and national standard measures sourced from organizations such as NCQA Healthcare Effectiveness Data and Information Set (HEDIS), CMS Star Ratings, Agency for Healthcare Research and Quality (AHRQ) and Pharmacy Quality Alliance (PQA).

BUSINESS HEALTH CARE GROUP 2021 PHYSICIAN PERFORMANCE STUDY

The Bottom Line First: There is the Potential for Dramatic Savings

	Primary Care Physicians (PCPs)	All Specialist Procedures	PCPs + Specialist Procedures
Total Annual Cost	\$810M	\$681M	\$1.49B
Annual Savings by Improving Performance to 50 th %-ile or above or Steering Pts to Providers at the 50 th %-ile or above	\$324.7M (40%)	\$57.65M (8.5%)	\$382.35 (25.7%)

What follows will tell you how we get to this conclusion

Study Objectives That I'll Address Today

1. What is the quality and efficiency of each PCP, looking at data from 2018-2019 combined?
2. What is the cost-efficiency of individual specialists when performing certain procedures, looking at data from 2018-2019 combined?
3. What is the cost savings potential of incenting patients to see higher efficiency PCPs/Specialists and/or improving the performance of lower performing PCPs/Specialists?

STUDY METHODOLOGY



Data Source, Optum Episode Treatment Groups (ETGs) and Optum Evidence-Based Quality Measures (EBMs)

- Data Source: Wisconsin Health Information Organization (WHIO), Wisconsin All-Payer Claims Database
- Data for 2 years (2018 and 2019) were used
- Patients were included if they had both medical and pharmacy benefits throughout all of 2018 and 2019
- Attribution of patients to PCPs
 - Used assigned PCP if the patient had one
 - If no assigned PCP, used imputed PCP (based on most cost)
- Episodes of care were included in our cost-efficiency analysis if a) they were completed, b) were not cost outliers (determined by outlier flag in the database), c) there were ≥ 500 episodes for that ETG across all PCPs included in our analysis, and d) we believed that a PCP could reasonably be held accountable for the cost of an episode in that ETG. 151 ETGs met these criteria.
- We used 294 EBMs related to management of preventive care and diseases commonly managed by PCPs to evaluate quality of care.

Calculation of PCP Quality & Cost-Efficiency Scores

- Quality scores for each PCP were calculated as $\text{sum}(\text{compliant EBM results}) / \text{sum}(\text{total compliant and non-compliant EBM results})$ based on all EBMs that were relevant to that PCP's patients. The overall mean, 25th percentile, median, and 75th percentile values were calculated for the entire population of PCPs.
- Cost-efficiency scores were calculated for each ETG for each PCP using this formula:

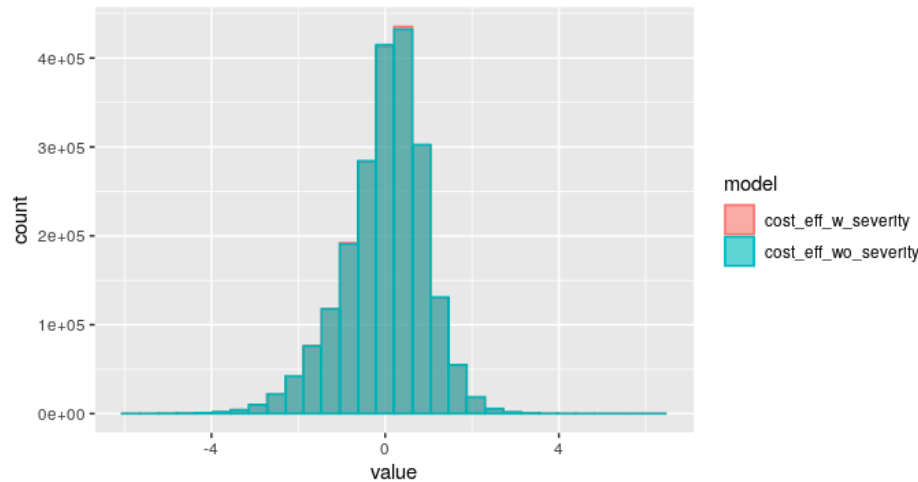
$$\text{cost efficiency score} = \ln \frac{\text{predicted cost}}{\text{actual cost}}$$

- Actual cost was normalized cost. Predicted cost was estimated using the GNS artificial intelligence (AI) platform.
- The following variables were controlled for explicitly in the models: age, gender, line of business, specific comorbidities, number of comorbidities, specific complications, number of complications, and single-level CCS diagnosis. Other potential confounders were controlled for by our AI-platform.
- An overall cost-efficiency score for an individual PCP was derived by taking a weighted average of that PCP's ETG-specific cost-efficiency scores, where the weight was the number of episodes in each ETG for which the PCP was responsible.

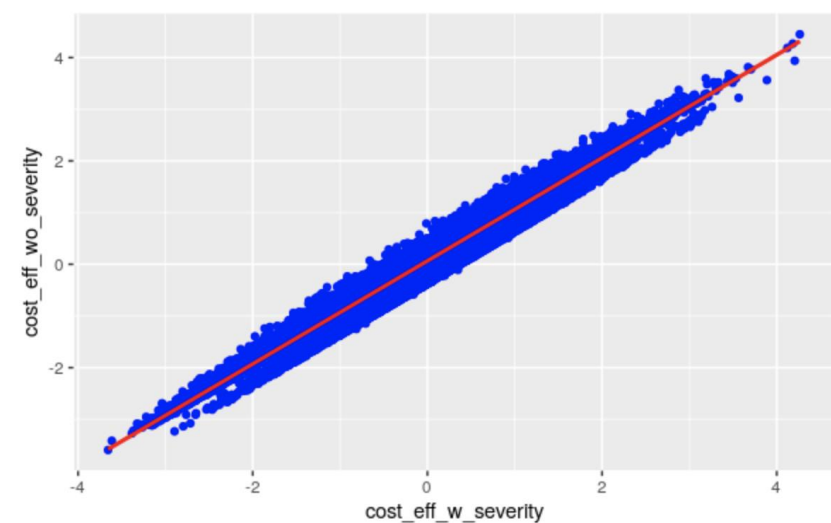
Optum Severity Score and ERG

- REFS models with and without Optum severity score or patient level ERG score were compared.
- No difference adding this information to the models.
- Models with and without severity score or ERG gave very similar distribution in episodes cost efficiency scores.

2018 and 2019 episodes cost efficiency scores with and without Optum severity scores



2018 and 2019 cost efficiency scores with and without Optum severity scores (Hypertension, wo comp, w comorb episodes)



Calculation of Cost-Efficiency Scores for Specialists

- We calculated MD-specific cost-efficiency scores for specialists who performed any of 10 procedures using the same methodology as we used to calculate cost-efficiency scores for PCPs.
- The 10 procedures we examined were:
 1. Cataract surgery
 2. Vaginal deliveries
 3. C-sections
 4. Total hip replacement
 5. Total knee replacement
 6. Coronary angioplasty
 7. Coronary artery bypass surgery
 8. Hysterectomy
 9. Cholecystectomy
 10. Laminectomy and spinal fusion

Estimation of Potential Cost Savings Opportunities

- Using the GNS AI platform simulation capability, we estimated the potential cost savings that could be realized if all MDs practiced in a fashion that was comparable to the 50th percentile in the distribution of cost-efficiency scores for a) PCPs and b) each type of specialist-procedure combination.

REFS is GNS' Causal AI Platform

- Learns mechanisms/drivers – not just patterns -- directly from the data
- Predictions explained
- Allows for counterfactual simulations
- **The only commercially available, scalable causal AI platform**
- Extensive peer reviewed publications
- KOLs
- Various validation methodologies

Advanced AI

Transparent & Scalable Mathematics



REFS

Model Validation

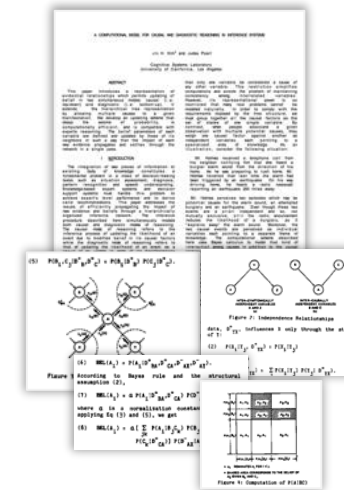
Technical Capabilities

- Based on Judea Pearl's Turing award-winning mathematics
- Based on Bayesian Network Inference and Global Optimization
- Accounts for known and unknown confounders
- Multidimensional data sets
- Handles a large number of data modalities and >10k variables

Underpinnings of the REFS Platform: Award Winning Mathematics - Scaled

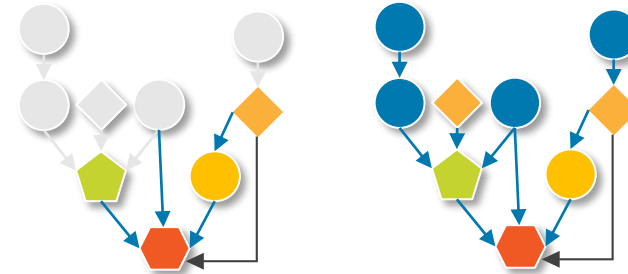


- Judea Pearl wins of 2011 Turing Award for *Probabilistic Cause and Effect Mathematics*
- Mathematical technique doesn't scale to large datasets – making its use impractical
- GNS integrates statistical physics techniques + super-computing to create its **GNS' REFS Platform**



The REFS Advantage

REFS' causal approach **reverse engineers the mechanisms underlying patient response** and allows for “what if” simulations, unlike more common “black box” predictive methods

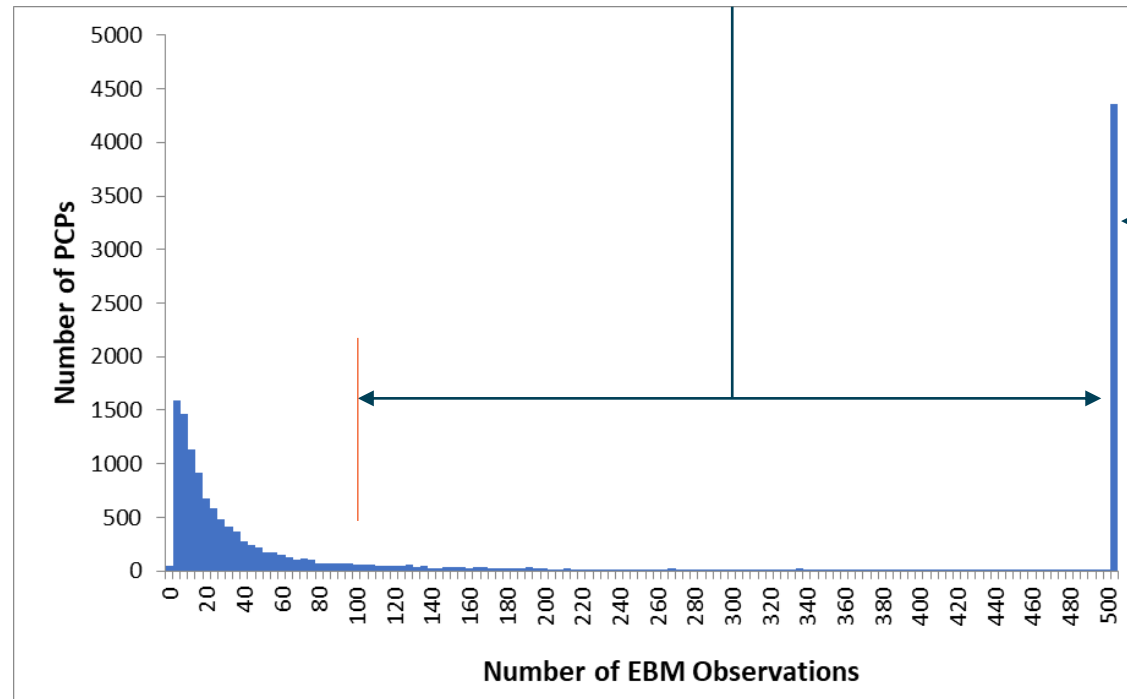


Key Questions	Predictive	Causal
What subpopulations with differentiated prognosis exist?	✓	✓
Which patients do/do not respond to an intervention?	✓	✓
What causes a patient to respond to the intervention?	X	✓
Why is a patient part of a subpopulation?	X	✓
What if I change the treatment or treatment protocol?	X	✓

METHODS & RESULTS

PCP Eligibility for Study - Criteria for Evaluating PCPs for Quality of Care

For a PCP to be included in the quality analysis, he or she needed to have ≥ 100 observations on Optum Evidence Based Measures (EBMs) related to Optum Episode Treatment Groups (ETGs) we considered AND ≥ 30 episodes of care



PCPs with ≥ 100 observations on EBMs

6,027

PCPs with ≥ 100 observations on EBMs
And ≥ 30 Episodes

4,587

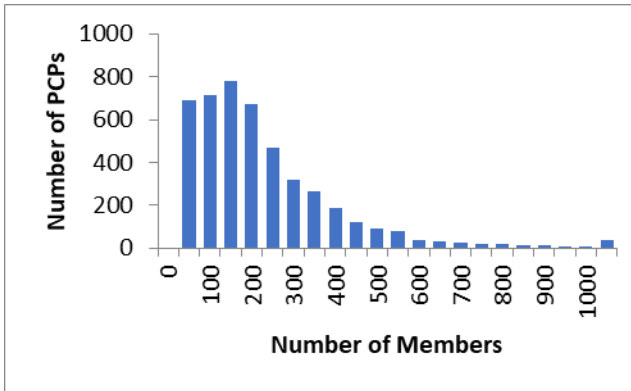
← **PCPs analyzed in Quality analysis**
(20% of all PCPs in dataset)

Overview of PCPs & Members Evaluated

PCP Specialty	Number of PCPs	Percent of PCPs
Family Medicine	2, 583	56.3%
Internal Medicine	1,202	26.2%
Pediatrics	736	16.0%
General Practice	37	0.8%
Adolescent Medicine	28	0.6%
Osteopathic Medicine	1	0.0%
Total	4,587	

Member Summary
1,543,551 episodes
737,946 members
Mean Age: 43
Female: 56% Male: 44%

of patients per PCP
Mean: 205

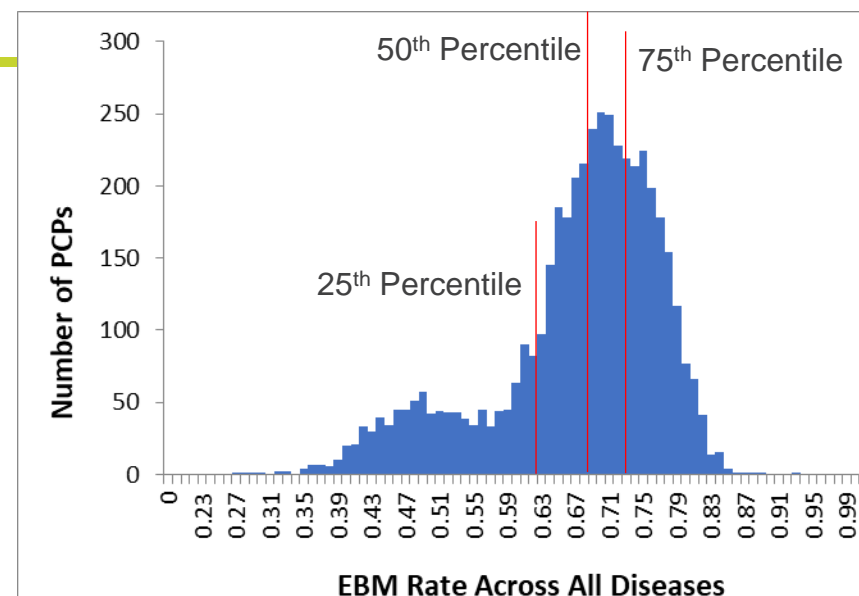


Line of Business	Number of Episodes	Percent of Episodes	Member Count*	Total Annual Cost (\$M)
COMMERCIAL	492,595	32%	248,974	\$293
MEDICAID	692,347	45%	347,545	\$639
MEDICARE	245,434	16%	100,456	\$218
Null	113,175	7%	59,309	\$103

* Some members are counted more than once in this table, since they had episodes while in different LOBs.

PCP Quality Ranking Distribution

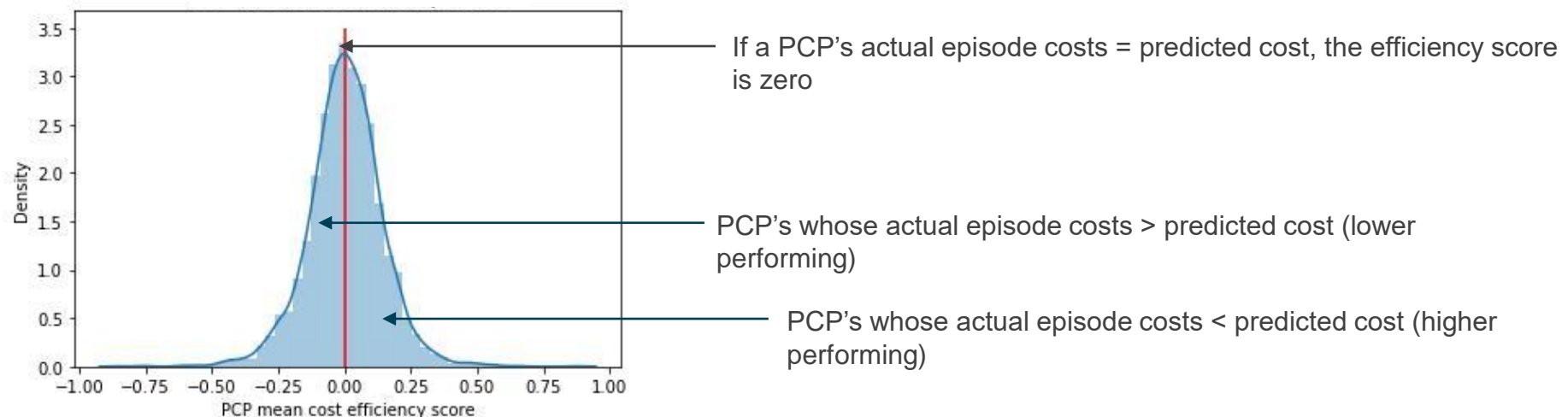
Percentile	EBM Rate
25 th	0.629
50 th	0.688
75 th	0.737



PCP New Ranking	PCP Count	Quality Ranking Name	Quality Ranking Description
1	925 (20%)	Outstanding Performers	we're 80%* confident these providers perform better than the 75th percentile
2	1,060 (23%)	Good Performers	we're 80%* confident these providers perform better than the 50th percentile, but are not in Rank 1
3	621 (14%)	Typical Performers	we're neither 80%* confident performance is better than the 50th percentile nor 80%* confident performance is worse than the 50th percentile
4	1,981 (43%)	Below Average Performers	we're 80%* confident performance is worse than the 50th percentile

Approach to Assessing Cost-Efficiency

- Utilized GNS' causal learning platform (REFS) to predict the cost for each patient for each disease after adjusting for potential confounders (e.g., age, gender, severity, complication, comorbidity, diagnoses, line of business etc.)
- Cost efficiency score = $\ln(\text{predicted_cost} / \text{actual_cost})$
- Patient cost efficiency scores were aggregated to the attributed PCP and then an overall efficiency score was calculated based on actual costs relative to predicted costs



PCP Cost Efficiency Ranking – Percentile Categories

PCP Cost Ranking	PCP Count	Ranking Name	Ranking Description
1	678 (14%)	Outstanding Performers	we're 80% confident these providers perform better than the 75th percentile
2	982 (20%)	Good Performers	we're 80% confident these providers perform better than the 50th percentile, but are not in Rank 1
3	1,458 (30%)	Typical Performers	we're neither 80% confident performance is better than the 50th percentile nor 80% confident performance is worse than the 50th percentile
4	1,711 (35%)	Below Average Performers	we're 80% confident performance is worse than the 50th percentile

Total # of PCPs included in the Cost Efficiency Analysis = 4,829. This number is greater than the number of PCPs included in the Quality Analysis b/c we did not require ≥ 100 observations on Optum EBMs in order to be included in the Cost Efficiency Analysis.

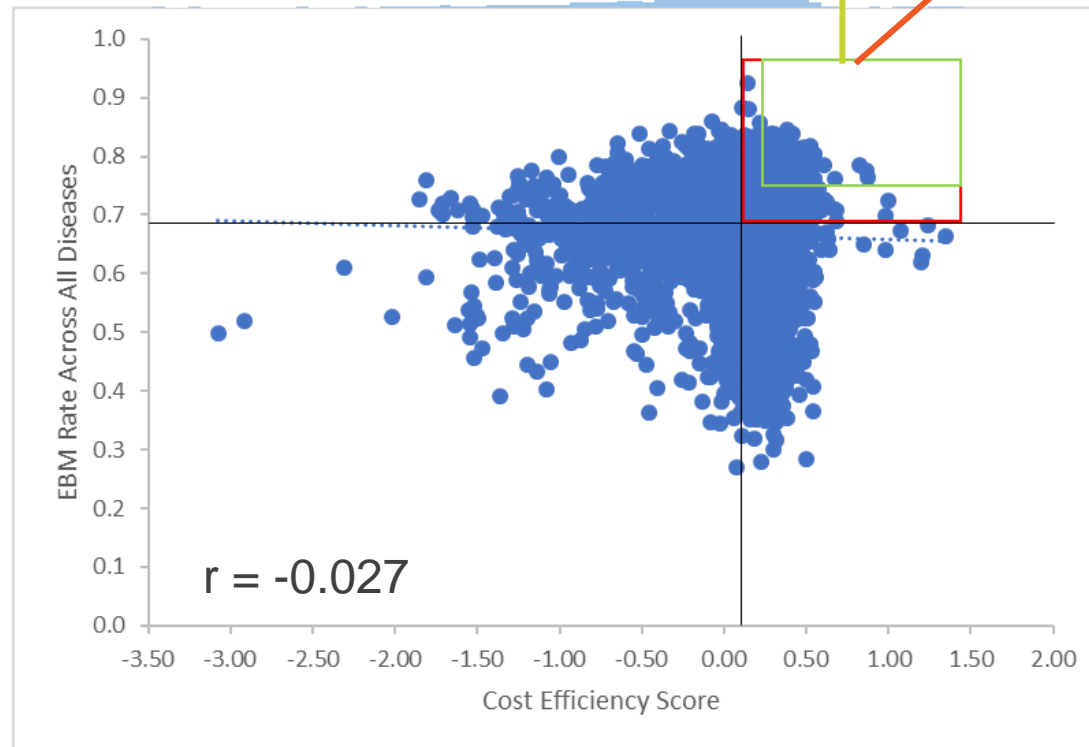
Number of Providers, Patients and Episodes in Particular Cost Efficiency %ile Groups

Cost efficiency score percentile	# of PCPs in this cohort	# of patients corresponding to PCPs in this cohort	# of episodes corresponding to PCPs in this cohort
Full Population (Everyone)	4,829	1,039,183	2,112,863
80 th percentile and above (Top 20%)	966	239,432	385,151
60 th percentile and above (Top 40%)	1,932	485,308	853,593
50 th percentile and above (Top 50%)	2,415	590,899	1,072,253

Relationship Between Cost and Quality

There were 190 PCPs who were both better than 80th percentile of cost efficiency and 80th percentile of quality.

There were 1,083 PCPs who were both better than 50th percentile of cost efficiency and 50th percentile of quality.



Potential Annual Savings by Steering Patients or Improving PCP Provider Performance

- Total annual cost across all diseases evaluated = **\$810M**

1 Yr Savings Potential from Moving Patients to More Efficient Providers Based on Analysis of 2018-2019 Data Combined

Percentile	Mean Savings (\$M)
80	\$455.5
60	\$369.1
50	\$324.7

Even a shift from moving all patients to the PCPs in the top 50th percentile could have a significant savings impact

Overview of Specialty Cost Efficiency Analysis

GNS performed a cost efficiency analysis on specialists who perform the following procedures:

1. Cataract surgery performed by ophthalmologists
2. Deliveries performed by obstetricians (separately for C-sections and vaginal births)
3. Total hip replacement performed by orthopedic surgeons
4. Total knee replacement performed by orthopedic surgeons
5. Coronary angioplasty performed by interventional cardiologists
6. Hysterectomy performed by gynecologists (separately for abdominal vs vaginal)
7. Cholecystectomy performed by a general or gastrointestinal surgeon
8. Coronary artery bypass surgery performed by a cardiac surgeon
9. Combined laminectomy and spinal fusion performed by either a neurosurgeon or an orthopedic surgeon

Overview of Specialty Cost Efficiency Analysis

Specialist	Procedure	# of Episodes	# of Providers	Total Cost
Ophthalmology	Cataract Surgery	17,474	642	\$102M
Obstetrics Obstetrics and Gynecology Family Medicine	C-Section Delivery	4,576	842	\$121M
Obstetrics Obstetrics and Gynecology Family Medicine	Vaginal Delivery	10,734	1,190	\$179M
Orthopedic Surgery	Hip Replacement	4,899	365	\$161M
Orthopedic Surgery	Knee Replacement	6,923	416	\$209M
Interventional Cardiology Cardiology	PTCA	5,674	405	\$277M
Thoracic Surgery	CABG	1,345	108	\$131M
Gynecology	Hysterectomy	586	246	\$8M
General Surgery	Cholecystectomy	5,405	524	\$78M
Neurosurgery Orthopedic Surgery	Spinal Fusion and Laminectomy	2,095	176	\$96M

2018 and 2019 Combined Annual Cost & Annual Potential Cost Savings Summary

	PCPs	All Specialist Procedures	PCPs + Specialist Procedures
Total Annual Cost	\$810M	\$681M	\$1.49B
Annual Savings by Improving Performance to 50 th %-ile or above or Steering Pts to Providers at the 50 th %-ile or above	\$324.7M (40%)	\$57.65M (8.5%)	\$382.35 (25.7%)

CONCLUSIONS

- There is substantial variation across PCPs in both quality and cost-efficiency of care
- There is substantial variation across specialists in cost-efficiency of care (We didn't assess their quality of care.)
- >\$382M/yr in savings could be realized if PCPs and specialists who scored below the 50th %-ile changed their patterns of practice so they scored above the 50th %-ile of cost-efficiency scores.
- Our estimate of potential savings would be even greater if we added 1) episodes of care that were below the 50th %-ile that were attributable to MDs who, overall, were \geq the 50th%-ile and 2) an assessment of appropriateness of care to our specialist cost-efficiency analysis.



THE POWER OF PARTNERSHIP. HEALTH CARE REIMAGINED.

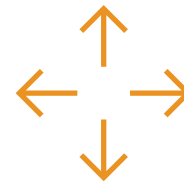
Health Plan Utilization of the BHCG Physician Value Study

December 2021

BHCG / Centivo partnership

Our shared goals are simple yet powerful:

- 1 | Affordable healthcare for employees and their families
- 2 | High-quality
- 3 | Cost sustainable for the business community
- 4 | Compensation tied to value



CENTIVO SERVES AS A
CATALYST FOR CHANGE

on behalf of the business
community and BHCG –
and to create alignment
with high-value providers

The way forward

An engaged business community & progressive health plan partnering closely with accountable, high-value providers



A new purchasing model that super-charges aligned incentives and benefits from multi-employer clout.

The construct for our proprietary networks



We build our proprietary networks around high-value health systems in Eastern WI:

- Shown to deliver high-value care
- Care coordination & disease management capabilities
- Experience with risk-based contracts



We then make the high-performing providers from each health system available to members:

- We remove low-performing PCPs from the member activation process, to ensure members are only picking a high-value PCP to guide their care
- We help curate a PCP's referral neighborhood, steering towards preferred, high-value specialists in the referral

Identifying lower-performing providers:

Use robust data from the Physician Value Study to identify the lower-performing providers from each health system based on cost and quality.

The result? Up to 25% of providers from each health system are made inaccessible to members to select as their guide. So care is guided by the top 75%, resulting in much higher-value care.

What do we have to consider?

- We are facilitating strong patient and PCP team relationships, requiring:
 - “Stickiness” – high-performing PCPs should remain high-performing over time, not drop in and out of that status
 - Access – especially from the PCP team since that is the intended initial point of care
 - Alignment – from all parties on features they control from plan design to operational efficiency to reimbursement terms
- All elements of the total cost of care:
 - Utilization and price of services when care is needed – ideally, resulting in efficient care from providers with competitive prices
 - Patient health management – the most cost-effective care is when care isn’t needed
 - Risk and success sharing – creating a sustainable model for all parties

A unique use case: Employer on-site clinics

- WI employers have established many employer-specific on-site or near-site primary care clinics. Will these clinics evolve?:

From

Strong providers
of episodic care



To

Effective holistic
patient managers

Specialty referrals driven
by relationships or history



Specialty referrals driven
by data and analytics like
the Physician Value Study

The ultimate goal is to make health care better

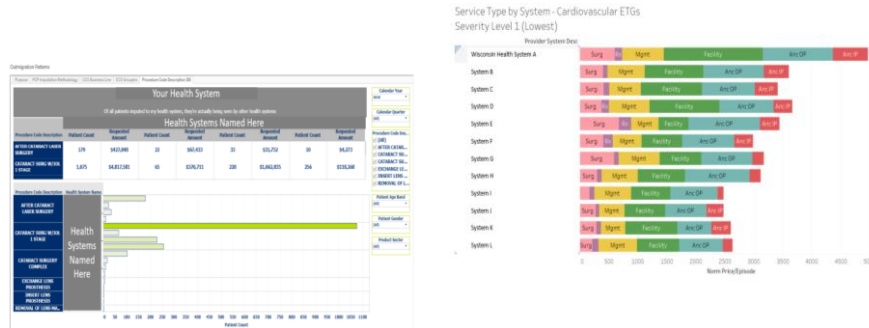


- The desired end state is not ongoing segmentation – it's a collaborative process to continuous improvement:
 - Providers and the business community work together to improve performance from the entire provider community for the entire patient community
 - Goal: 100% of PCPs meeting high-performance criteria and available to patients to manage their care

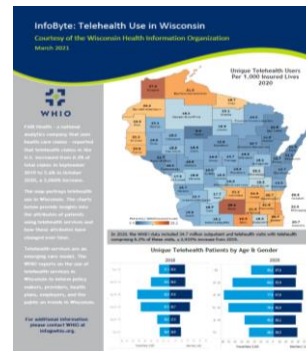


- The pathway to improvement is paved with data and accountability:
 - Informed by data on both the “what” and the “why”
 - With two-way accountability – reduced total cost of care and better patient management in exchange for success sharing of the financial benefits

Products and services

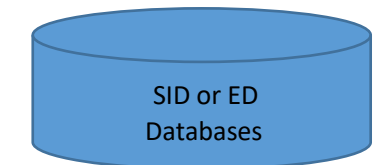


- Data sets
- Pre-built reports for provider organizations and health plans
- Custom data extracts
- Custom analytics and reports
- Public reports



New Products

- Medicare Fee-for-Service data set
2018 Medicare-Fee-for-Service claims combined with the claims submitted by health plans, self-funded employers and Medicaid.
- Socio-Economic Reference file (SERF)
12 characteristics of the people who live in a specific geographic area based on survey data.



Education
Income
Race
ADI
Renting
Computer access

4. Report format and delivery

Who created the report and why?

The Business Health Care Group commissioned the Physician Value Study and has asked the WHIO to distribute provider organization reports using our secured report portal so that providers can use this information for improvement.

What will be included?

Primary care and specialist results at the organization level. Clinician level results are available to the provider organization for which that clinician provides services.

What supporting information is provided?

Overview of the study methods. Organizational level comparisons of PCP quality and cost, and specialist costs.

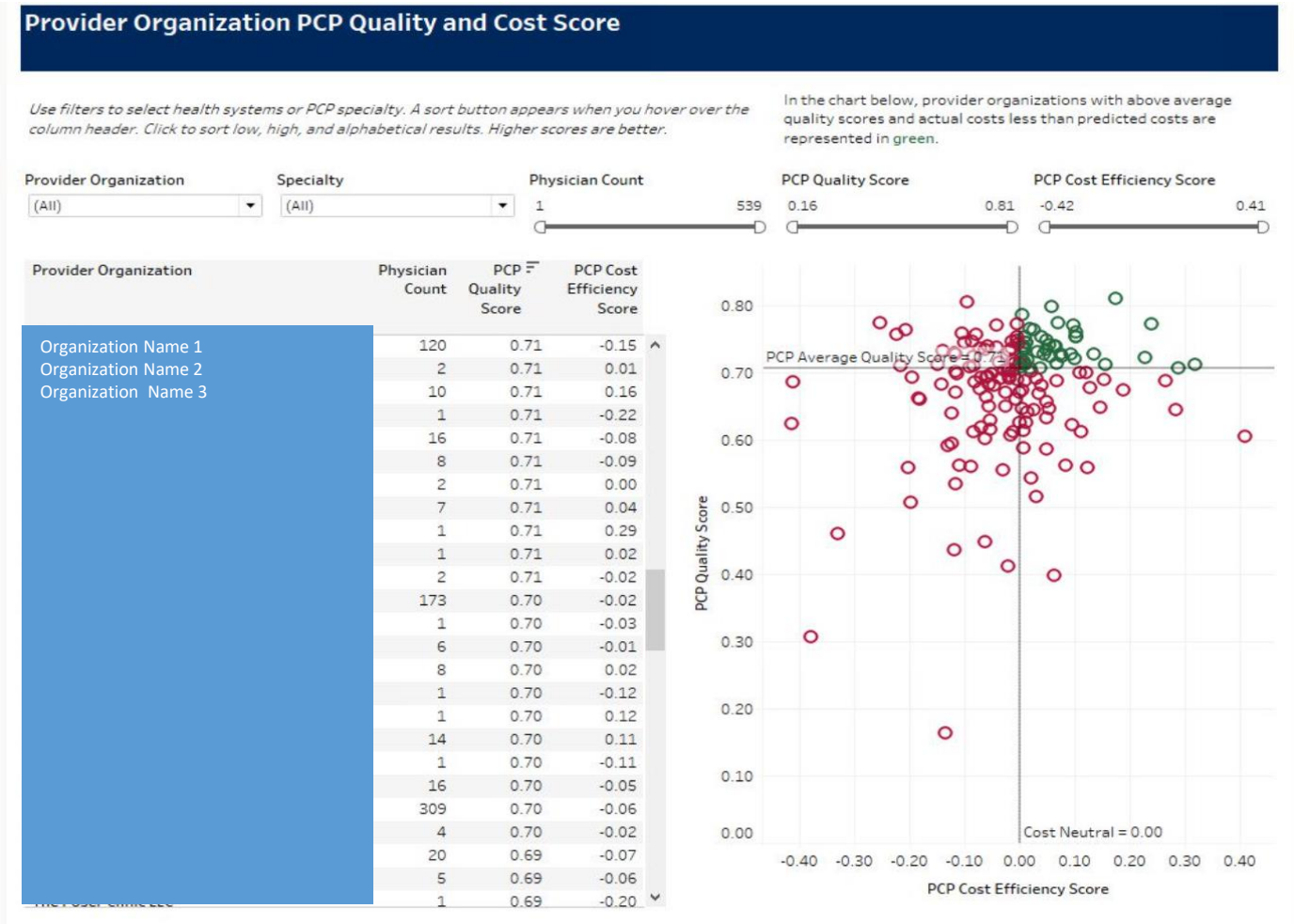
Who will have access to the reports?

Provider organizations may access their report for a fee. Except for the state level summary provided today, there will not be a public report of these results.

Sample mock-up
slide

Provider
Organization PCP
Quality & Cost
Efficiency Scores

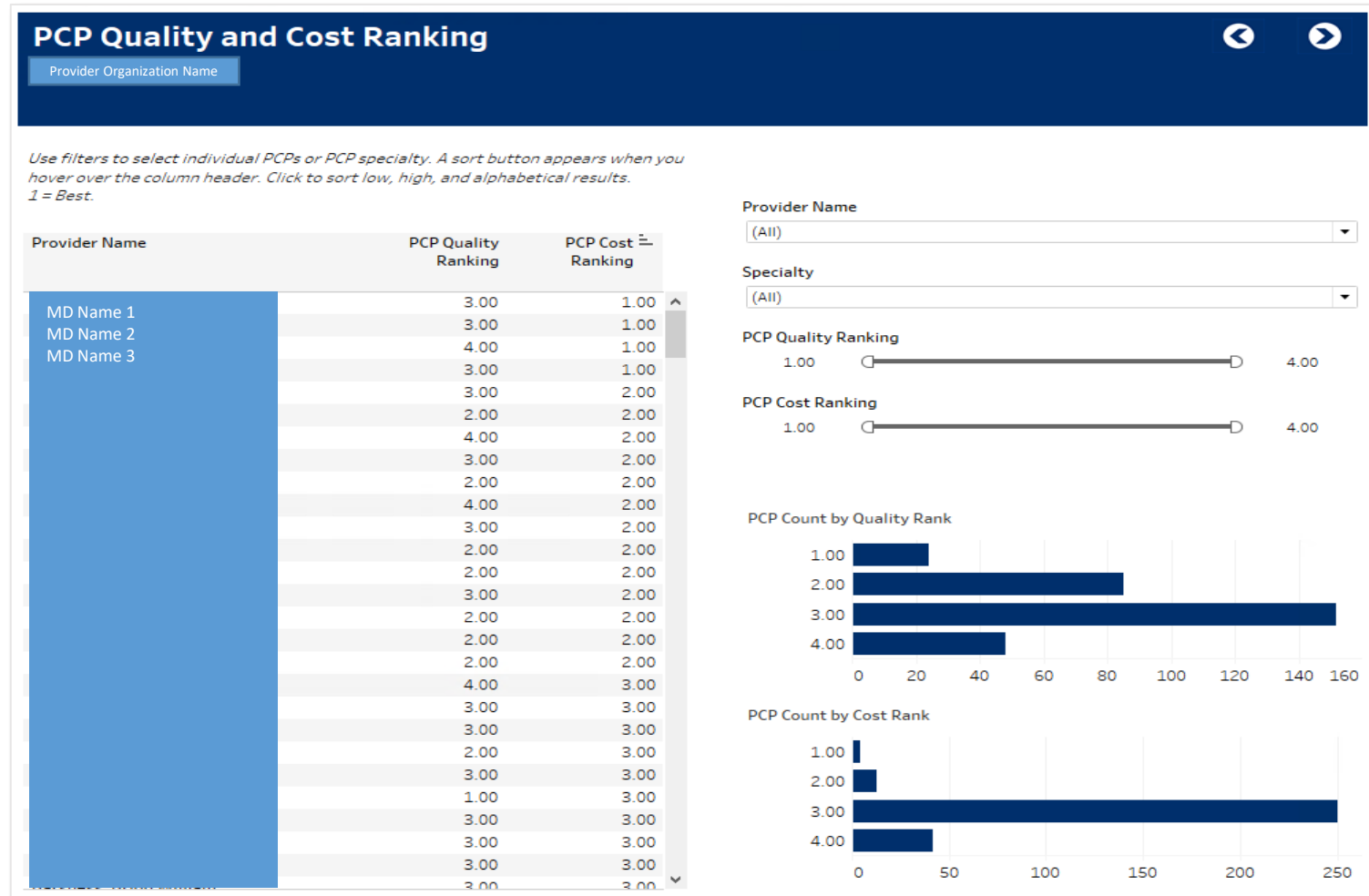
Available to all
provider
organizations
included in the
report



Sample mock-up slide

Individual PCP Rankings

Available to individual provider organization only



Provider organizations may contact dana.richardson@whio.org
or 608-442-3877 for more information about these reports.