

Clarify

Clarify's Provider Performance Methodology

■ BENCHMARKING & MEASUREMENT WITH THE
CLARIFY ATLAS PLATFORM®

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■ WHITE PAPER

Table of contents

Executive Summary	3
Background	4
Measurement challenges	4
Precise Evaluation	5
Clarify Approach	6
Enrich: Start with a solid data foundation	6
Group: Solve for care delivery complexity	6
Benchmark: Assess efficiency and outcomes fairly	8
Score: Summarize provider performance	9
Conclusion	10



Executive Summary

Accurate provider performance measurement is a critical input to improve the quality and manage the cost of patient care. Measuring performance is innately challenging due to fragmented and often limited data, over-simplified benchmarking approaches, and a lack of methodological transparency, making it challenging to build buy-in and trust. Clarify has developed a novel provider performance measurement and benchmarking approach built from the industry's most extensive, clean, consolidated claims dataset of 300M+ patient lives that directly addresses these challenges. This depth and breadth of data coverage enables a more precise evaluation of a provider's panel and practice, and powers episode grouping and benchmark methods that capture each patient's unique complexity, for the most fair and accurate assessment possible. The end-to-end approach, from data enrichment through episode grouping and benchmarking, is transparent and auditable, an essential requirement to build trust in the resulting scores. These reliable, transparent, and accurate insights are necessary to develop strategies and solutions to power better patient care and meaningfully engage with providers.



Background

Care decision-making and the tremendous variability in unit cost, treatment pathways, and outcomes are central drivers of the total cost of care. With healthcare spending reaching \$4.5 trillion in 2022 and continuing to climb, stakeholders are pursuing new strategies to manage costs better while attaining optimal outcomes and patient experience. Many have attempted to accurately and precisely quantify provider performance, but few have succeeded. Profiling providers is an essential first step for implementing many of the strategies that have proven most effective in powering better and more affordable patient care, including:

- **Network Design and Optimization:**
Selecting the highest value providers to include in networks and shared risk arrangements
- **Care Navigation and Referral Guidance:** Helping patients and care managers find the highest value, best-fit provider for their specific needs
- **Performance Improvement:**
Identifying and engaging providers with specific, actionable opportunities to improve the quality and affordability of care

Today, episode groupings are limited. Many commonly utilized approaches to grouping claims into analyzable episodes of care focus solely on acute events or procedures, missing the longer-term lens necessary to evaluate the total cost of care. They also often leverage external grouping software that obscures the ability to audit service inclusion down to the claim level.

Finally, many oversimplify benchmarks. Just as patients vary by background, health situation, and demographics, providers' specialties and patient panels vary. Most approaches do not factor in these variables because they add considerable complexity to capturing the data that goes into generating accurate and actionable performance metrics. The industry also uses overly simplified and outdated approaches that only rely on analyzing spending or limited models, such as Diagnosis-Related Group (DRG) adjustments, Hierarchical Condition Category (HCC) classification counts, significantly limited cohort features like age and gender, limited datasets without regional factors, limited integration of Socio-Behavioral Determinants of Health (SBDoh), and nonspecific provider attribution. These approaches do not accurately and fairly capture the nuanced cohorts and features influencing healthcare performance outcomes.

MEASUREMENT CHALLENGES

While effectively measuring provider performance is vital, many common industry approaches continue to create challenges.

First, there is fragmented, limited, and messy data. A large, comprehensive, and independent dataset is critical to fair and accurate measurement. Unfortunately, healthcare is plagued by messy, fragmented data sources, making it challenging to leverage the full power of data science and machine learning. Often, performance variation analyses only identify differences within an organization's population rather than comparing the population to a broader, external view of performance.

Precise Evaluation

Robust and accurate data is the foundation for effective provider performance evaluation. The Clarify Atlas Platform® combines one of the industry's largest, longitudinal, patient-level datasets to gain insights into more than 300 million lives, including Medicare, Medicaid, and commercially covered lives. Clarify is one of a select set of companies with CMS Qualified Entity (QE) status for all 50 states for access to 100% of Medicare fee-for-service data. The QE data allows dynamic interrogation of complete medical and pharmacy claims unavailable on the Medicare Limited Data Set (LDS) and the CMS Virtual Research Data Center (VRDC) of static aggregate extract insights. This data foundation is essential to provide the most complete and reliable picture of performance possible.

From this foundation, Clarify takes a unique end-to-end approach to evaluating provider performance that addresses the challenges head-on.

1. **Enrich:** Traditionally siloed claims data is augmented with prescription insights and patient-level social determinants to gain deep insights into covered lives.
2. **Group:** Claims are grouped using Clarify's Patient Care Episodes methodology, organized around how care is delivered. The approach is to synthesize claims and encounters into analyzable episodes that include all relevant services involved in treating and managing patient clinical needs. Episodes account for procedures, acute events, and longer-term chronic condition management to measure cost, utilization efficiency, and quality across the complete continuum of care.

3. **Benchmark:** Clarify generates patient-specific expected utilization and outcome benchmarks by matching patient episodes to like cohorts on the most clinically relevant features for each type of care.
4. **Score:** Finally, the ratio of observed performance relative to the patient-specific, case-mix adjusted benchmark across a provider's attributed patient panel is used to generate a summary score that belies its underlying sophistication.

This approach offers a single source of insight and supports rapid analysis, consistency, and flexibility to iterate and optimize over time. Most importantly, it allows users to interrogate each score down to the underlying claims data it was built from in a fully monitorable, transparent process.

Clarify evaluates providers on multiple dimensions of both efficiency and quality. The approach goes beyond industry standards of cost, process, and appropriateness to specifically assess utilization efficiency and outcomes. A narrower focus increases the risk of missing the whole picture. This is why outcomes are the foundation of Clarify's quality assessment. Robust case-mix adjusted benchmarks at the patient level ensure the unique complexity of each provider's panel is considered.

EFFICIENCY

- **Utilization:** How does utilization compare relative to like cohorts using standardized amounts based on resource utilization, normalizing for geographical and price variation?
- **Cost:** How do site-of-care decisions and unit price affect overall affordability?

QUALITY

- **Process:** How well do providers adhere to specialty-specific best practices and evidence-based guidelines?
- **Appropriateness:** Are physicians providing suitable and beneficial care – and not subjecting patients to unnecessary risk?
- **Outcomes:** Does their overall effectiveness result in better case-mix adjusted outcomes for patients?

Clarify Approach

ENRICH: START WITH A SOLID DATA FOUNDATION

The Clarify Atlas Platform continually ingests refreshed datasets and new data sources with an automated data-cleaning process that cross-validates across sources to generate the most complete and accurate records possible. Then, it identifies and corrects outliers and sorts claims into appropriate specialty- or disease-related categories. By linking claims, prescription, and socioeconomic data, the analytics provide the most complete picture of patients' longitudinal healthcare journeys, and benchmarking models are informed by the most data possible. Claims data are enhanced with additional analytics attributes not typically accessible in claims, including a standard amount that measures resource utilization, normalizing for geographic and price variation. This uncovers patterns otherwise hidden from models built with claims data alone.

GROUP: SOLVE FOR CARE DELIVERY COMPLEXITY

Clarify then groups individual encounters into over 1,000 types using Clarify's Patient Care Episodes methodology which is based on how care is delivered. Claim encounters are stitched into condition or procedure-specific episodes and layered with referral logic to capture each patient's complete journey. Clarify's grouping defines three primary episode types, with underlying subtypes and variable lengths tailored to each type of care:

- **Procedural:** Divided into high- and low-acuity episodes, these have a longer length for high-acuity procedures
- **Chronic:** Long-term medical management episodes that include both procedures and other treatments and interventions
- **Acute:** Short-term medical episodes are further categorized based on whether a referral occurred for a procedure or specialist/sub-specialist consultation

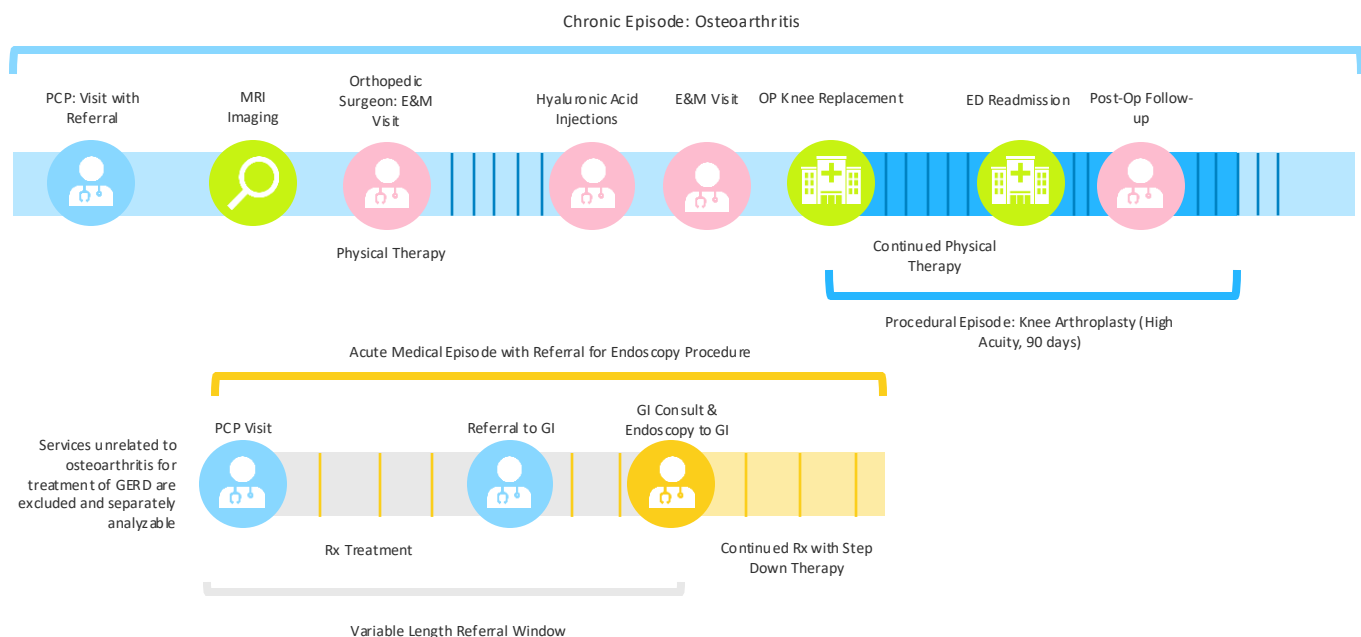
Each episode is assigned a more granular episode reason based on the service code (DRG or HCPCS) or primary diagnosis of the triggering encounter. The grouping methodology still preserves the ability to interrogate and audit the underlying claims, delivering the necessary transparency to build trust.



The example in Figure 1 highlights the episode construction for a patient struggling with chronic osteoarthritis of the knee. Their journey begins with diagnosis during a PCP visit, through referral to an orthopedic surgeon, and an eventual knee arthroplasty after lower cost, less invasive interventions were unsuccessful. This patient's example highlights several impactful elements excluded from standard grouping methodologies:

- **Flexible Analysis:** The chronic episode captures the entirety of the patients' osteoarthritis journey. The 90-day high-acuity procedural episode is also separately analyzable to assess the surgical effectiveness and quality of the operating physician and facility while also accounting for the post-operative care that may influence total episode costs, such as SNF, IRF, re-admissions, and DME utilization.
- **Service Exclusions:** To ensure that only relevant medical spending is included in each episode, service exclusion criteria are applied based on the diagnoses and service type. In this case, services unrelated to osteoarthritis, like their treatment for GERD during the same period, are excluded from the osteoarthritis episodes but are still independently assessed in an acute medical episode.
- **Referrals:** The variable-length period, from the initial referring visit to treatment, is included in the episode to evaluate the downstream impact of how a provider guides patients to the best-fit care and then targets opportunities to improve.
- **Multi-Provider Attribution:** Each episode captures all providers who render care and direct care to reflect the nuances of the team-based approach, particularly critical for chronic disease management, often the highest-cost patients.
- **Dynamic Construction:** Episode duration is tailored to the care type with longer episodes to capture chronic care management and separately analyzable 30-90-day episodes for procedures and acute events.

FIGURE 1. PATIENT WITH OSTEOARTHRITIS OF THE KNEE



Clarify builds metrics and case-mix adjusted benchmarks on the Patient Care Episode methodology foundation to measure and assess performance relative to predicted outcomes. The metric library includes performance evaluation standards such as cost and specialty-specific quality and appropriateness based on clinical best practice guidelines. It also includes novel approaches to assessing efficiency and outcomes that necessitate robust case-mix adjustment at the patient level.

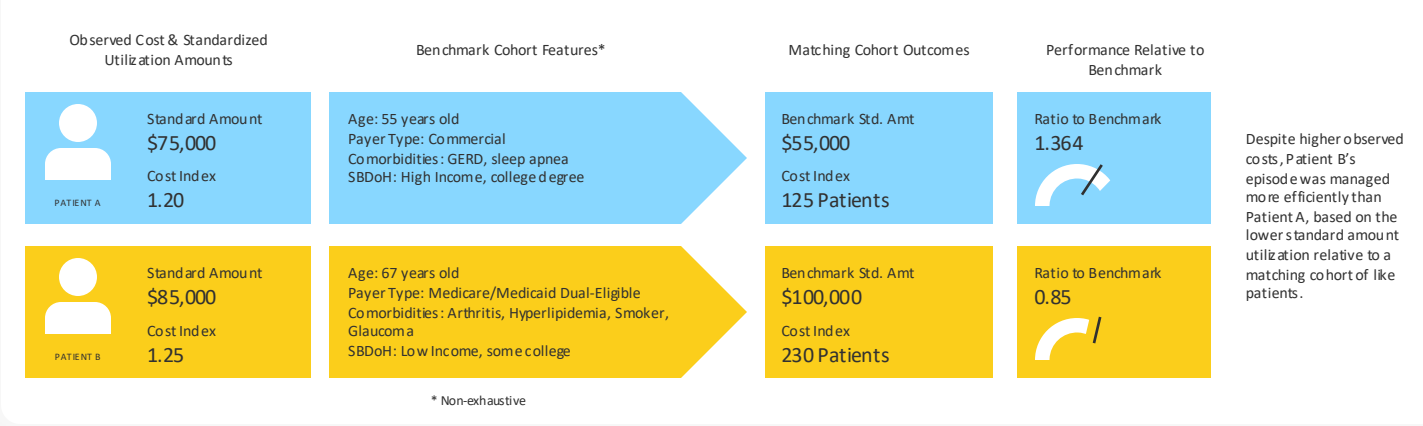
Efficiency is evaluated using Clarify’s standard amount—a dollar value added at the claim line-item level during claims enrichment as a proxy for resource utilization. By normalizing for geographic and provider-specific variation in price, this metric enables apples-to-apples comparisons of relative utilization and how a provider’s clinical decision-making drives statistically significant variation relative to peers across episodes. Clarify uses measures such as IP and ED utilization and readmission rates to assess outcomes and determine how well a provider’s care management prevents expensive and potentially avoidable utilization. In both cases, a sound benchmark that accounts for the unique complexity of each patient and, by extension, a provider’s attributed panel is essential.

Clarify benchmarks at patient and episode levels using patented technology that predicts expected utilization efficiency and outcomes by matching each patient’s episodes to a similar cohort. Cohorts are determined by empirically matching hundreds of features to identify which is the most statistically relevant. Each feature’s importance adjusts dynamically based on what is most relevant to each episode to generate the most precise prediction possible. Expected performance is based on the mean of that cohort to which each patient has been matched, with controls to ensure a defensible benchmark cohort size. While many approaches rely exclusively on

black-box machine learning models, this process is auditable and explainable. The cohort definitions, feature importance, and size of the benchmark cohort group are preserved and can be dissected to understand how each episode’s benchmark was determined and why.

The example in Figure 2 demonstrates the importance of robust case-mix adjustment in assessing efficiency and outcomes and how Clarify’s approach adjusts for individual patient complexity. In this case, when comparing two patients with similar osteoarthritis episodes, Patient A’s episode had a slightly lower cost index, indicating slightly lower service pricing. Patient A’s care also appears more efficient based on the standard amount. However, after matching to cohorts of like episodes, using input features including age and comorbidities and social determinants factors, payer type, and disease progression indicators, Patient B’s care had lower resource utilization than the benchmark and was more efficient and affordable. By preserving the ability to interrogate results back to the claim level, Clarify analytics can take these insights further to identify the types of service and events within Patient B’s episode, driving higher utilization to target specific and actionable improvement opportunities.

FIGURE 2. PATIENT-SPECIFIC BENCHMARKS ACCOUNT FOR CASE-MIX AND COMPLEXITY



As the final step, individual episodes are attributed to the specialists who rendered and directed their care and a patient's PCP, with performance measures aggregated across all attributed episodes. Clarify's episode structure enables attribution to all the providers who rendered or impacted care with their referral decisions, with weighting by the proportion of care attributed within the episode and as a proportion of a provider's overall practice. This overall performance is translated into a 0-100 score based on the percentile performance relative to peers. The score is simple by design, so that it can be easily integrated into network optimization models, referral guidance, and care navigation tools. Transparency and the ability to drill into the underlying data are preserved to build buy-in and trust.

The utility of Clarify's scores is further enhanced with provider-specific attributes that go beyond efficiency and quality to find the best-fit provider for any use case, including care navigation, network optimization, and targeting performance improvement opportunities.

- **Areas of Expertise:** Specialty taxonomy and credential data can contradict across reference data sources and frequently do not reflect a provider's actual practice pattern. Clarify derives specialty areas of expertise based on conditions and procedures that make up a significant proportion of each provider's practice relative to peers to better direct patients to not only the highest-value care but also the best-fit provider for their needs.
- **Referral Wait Times:** How long a patient waits to see a specialist impacts their experience and health. By measuring the typical time to referral for specialists, Clarify provides another data point to guide patients to

the best care for urgent needs.

- **Referring Provider Scores:** Clarify calculates a score for each provider based on the volume-weighted performance of all the downstream providers referred. This helps identify providers with the highest opportunity to improve the quality of their referrals for referral guidance improvement programs.
- **Affiliations:** Clarify cross-validates among several reference sources with actual claims practice patterns to determine practice group, health system, and contracting entity affiliations so that performance can be assessed at the individual provider level and higher entities. This enables effective network inclusion and exclusion modeling to build and optimize high-performing networks. Coupling these analyses with referral insights further identifies specific opportunities to reduce leakage and identify drivers of high-cost out-of-network spend.

Clarify Health data and analytics are designed for precision

CONCLUSION

Effectively, accurately, and transparently measuring provider performance requires a solid foundation of data and the ability to examine granular levels of patient- provider encounters. To address gaps in industry approaches to performance measurement, the Clarify Atlas Platform was created to ingest and enrich large amounts of data to address the complexities of healthcare while delivering performance assessments for different use cases that flexibly support the needs of organizations today and tomorrow. Clarify's robust, patented methodologies provide critical insights to address the clinical and business needs related to measuring, modeling, and acting on the quality and efficiency of care.



Clarify

About Clarify

Clarify Health Solutions® is a healthcare data and analytics company trusted by some of the most established organizations in healthcare, including providers, payers, tech and services, and life sciences. The Clarify Atlas Platform® is the foundation, leveraging the industry's largest and most robust dataset to map over 300M+ lives to deliver 20B+ AI-powered predictions to surface actionable insights with unparalleled speed and precision.

To learn more about how Clarify's data and analytics solutions can help your organization answer critical business questions about provider performance, visit clarifyhealth.com.