



The BHI Episode of Care Grouper Informs Better Clinical Analytics to Lower Costs and Improve Quality

Introduction

The Episode of Care (EoC) Grouper from Blue Health Intelligence® (BHI®) is the leading edge of commercial groupers, unique in its inclusion of both procedures and conditions, and in its fully transparent methodology.¹

With new fixed-payment programs proliferating and data analytics playing an even bigger role in clinical care and operations, interest is growing in defining episodes of care that extend beyond hospital stays to encompass every touchpoint in the course of care, from the initial trigger, such as an office visit, to the final disposition.² Episode groupers help payers reliably predict the costs to treat certain types of patients, central to the success of initiatives in bundled payment, accountable care, and population health. Providers look to assess their own costs relative to the episode payments in order to identify opportunities for improvement.

BHI's EoC Grouper serves a wide range of purposes. It is a vital tool for designing and evaluating care management programs and provider networks based on cost, quality, and outcomes. Payers, providers, and other healthcare stakeholders are empowered by the grouper to make more accurate resource decisions based on clinically valid, meaningful, and actionable data.

Users can drill down to the individual member/patient level to compare practice patterns among physicians or facilities, uncover operational insights, perform clinical research, and understand variations in care. It also offers a global view of all care episodes, drawing upon BHI's National Data Repository, the largest, most current, and conformed database of commercial medical and pharmacy claims – more than 20 billion to date – so that users can benefit from comparisons to national and regional benchmarks.

¹ In addition to being embedded in its products and services, BHI's proprietary methodologies are available as stand-alone algorithms that can be licensed.

² Health Care Transformation Task Force. "Episode Groupers: Key Considerations for Implementing Clinical Episode Models," 2019

The BHI Episode of Care Grouper's Broad Applications



Population health



Consumer price transparency



Case and outcomes management



Disease management



Quality improvement



Cost and use analysis

A More Accurate Representation of Patient Care

The BHI EoC Grouper provides a high-level conceptual model of illness, diagnosis, and treatment of individual patients for specified conditions. It groups healthcare data into an organized patient history that can be queried to identify potential opportunities for improvement.

Key elements include:

- Data models that organize the conceptual model into a set of analytic constructs representing the key aspects of an individual's medical history and the clinical tasks involved.
- Algorithms that group input data and populate the data model to create an accurate representation of an individual's medical history.
- Clinical logic tables that guide the construction process by identifying valid linkages among codes and categories.

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BHI's Episode of Care Grouper: At a Glance

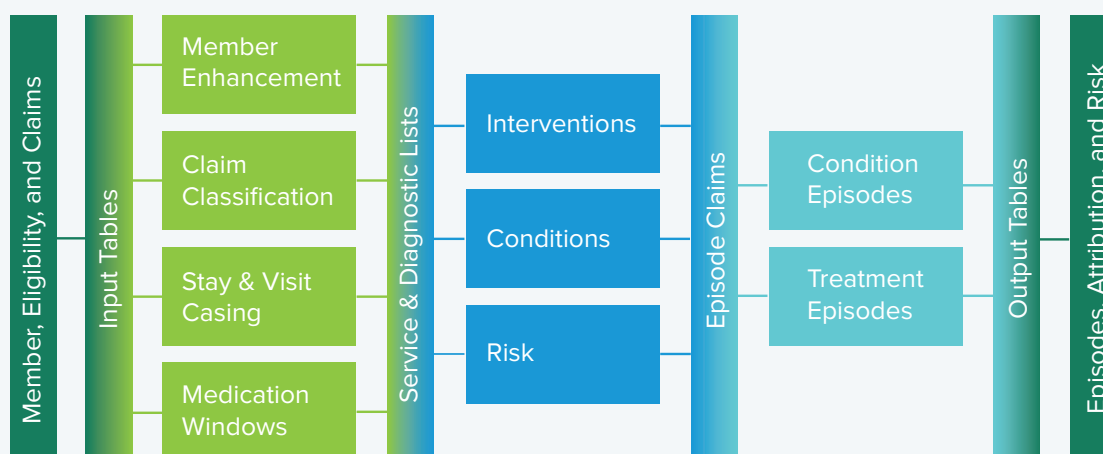
- Assigns services and diagnoses to an episode construct
- Breaks treatment episodes into before, during, and after timeframe windows for greater flexibility when sharing or reporting costs or utilization information
- Allows numerous customization options; clinical logic tables are owned and maintained by BHI and therefore new or updated episodes can be vetted and implemented quickly
- Provides the end user with predefined defaults and benchmarks
- Offers flexibility to create user-defined episodes based on local practice patterns or contracts
- Focuses on both treatments and conditions and maintains existing standard or custom logic and methodologies within an episode definition
- Drills into all the claims that make up each episode, helping to answer both general and detailed questions to improve communication and provide a shared understanding of results

BHI's Episode Engine

The grouper constructs episodes in tiers. First, it transforms healthcare transactions into events of care, such as hospital stays or medication windows; the intent is to translate the financial transactions received by an insurer into a view that a patient or a doctor would recognize. Next, it utilizes that view of the care received to create higher order clinical constructs; conditions that a patient had, the treatment patterns applied, and member risk. In the final stage, condition and treatment episodes are created, validated, attributed to both a facility and a physician, banded by cost and severity, and evaluated for continuous enrollment.



Figure 1: Episode Construction



The BHI grouper's clinical logic is presented in an intuitive, easy-to-understand manner, depicting a comprehensive patient history using clinically meaningful "units of analysis." Data transformations are shown step-by-step and are fully auditable, providing a level of transparency not seen in other commercial groupers. It offers a clinically meaningful representation of a patient's condition and its entire course of treatment; changes in acuity or stage; and the subsequent symptoms, findings, and/or complications resulting from various health conditions. It also recognizes that the working diagnosis reported for a condition may differ from the final diagnosis and that successful treatment may itself result in a new condition.

Because resource requirements and likely outcomes vary based on the individual's mix of conditions, acuity, stage, and the complications associated with each condition, BHI's EoC Grouper allows for a more granular view of health outcomes that can be measured in terms of survival; condition duration; changes in acuity or stage; symptoms; complications; and potentially avoidable occurrences such as emergency care, readmissions, and retreatment. Process measures also can be developed, such as time to final diagnosis and time to final treatment.

Clinically Meaningful Episode Constructs

BHI's EoC Grouper is particularly relevant to bundled payment and population health management initiatives. When providers are paid as a group for an episode of care or a set amount for a patient cohort, it is essential to understand everything that goes into a "typical" case – from first interaction to the end of treatment. Implementing a clinical episode payment contract requires setting a reasonable price and monitoring whether the actual costs of the medical episode were greater or lower than the negotiated price.

Given that payers have historically paid providers for each unit of service, most providers are challenged to determine the comprehensive price for an episode of care that accounts for both clinician and facility costs. The EoC Grouper gives the flexibility to the plan as well as the provider to set the definition of the treatments in the episode in order to create a bundle that can be monitored over time and used for payment.

Using the EoC Grouper, providers can be compared for resource use per episode against expected costs as well as their adherence to established clinical practice on the course and components of treatment. Episodes correspond to clinically meaningful topics, such as a clinical condition defined by diagnosis codes (e.g., osteoarthritis) or a particular type of treatment defined by procedure codes (e.g., a hip replacement).

Healthcare Research

BHI's EoC Grouper reflects the current practice of medicine through a model of care that accurately represents all of the clinical tasks and provider roles involved. As such, it is a critical tool for clinical and health policy research.

BHI's EoC Grouper contains several hundred episodes that enable the evaluation of a patient or the physician taking care of that patient. In addition, it allows users to drill down into more than 1,000 procedure and condition episodes and nearly 1,500 sub-condition episodes. These include the latest medical advancements in treating common conditions, such as infertility and cancer, as well as the treatment of newer conditions, such as COVID-19. Our EoC Grouper also has a pharmacy component, which in the absence of any physician visits, can infer a diagnosis based on prescriptions alone.

Evaluating New Care Delivery Models

The BHI EoC Grouper is an important asset for any 360° evaluation of a targeted or narrow care network that is comparing the quality and cost of bundled care programs or accountable care organizations. For health plans, the grouper combines multiple lines of business claims into a single view when looking to recognize providers for delivering high-quality, effective, cost-efficient specialty care for their customized networks.

Our grouper is being used to support network designations and evaluation for the entire Blue Cross Blue Shield System and its Blue Distinction® Centers of Excellence. These centers provide specialized care for bariatric surgery, cancer, cardiac problems, cellular immunotherapy, fertility, gene therapy for ocular disorders, knee and hip replacements, maternity care, spine surgery, and transplants.

The BHI EoC Grouper supports both condition and treatment episodes. All services for an individual are bucketed into the conditions that the individual has, creating condition episodes.

TREATMENT EPISODES

- CPT, HPCPS, or ICD procedure codes are used to trigger a surgical treatment episode
- Medicare severity diagnosis-related groups (MSDRGs) for events occurring in an inpatient setting
- Surgical and medical admission treatment episodes
 - Surgical – total knee replacement
 - Medical – sepsis

CONDITION EPISODES

- ICD diagnosis codes are used to trigger condition episodes
- Medical condition episodes
 - Chronic – diabetes, asthma
 - Acute – pneumonia
- Divided into three severity levels by the intensity of the included treatment

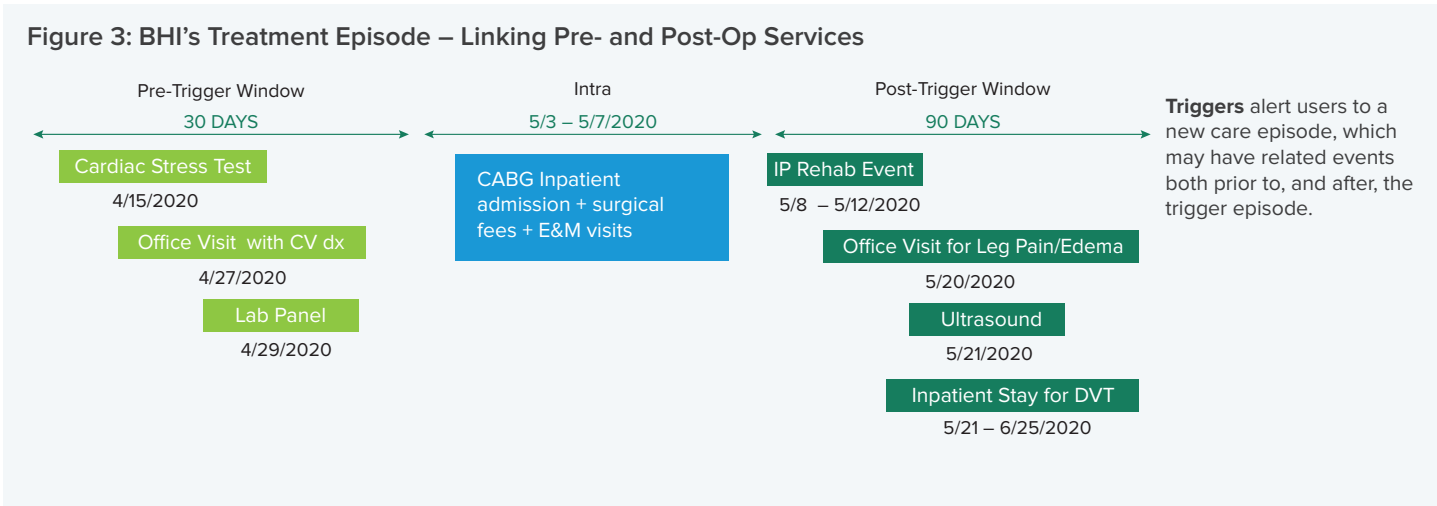
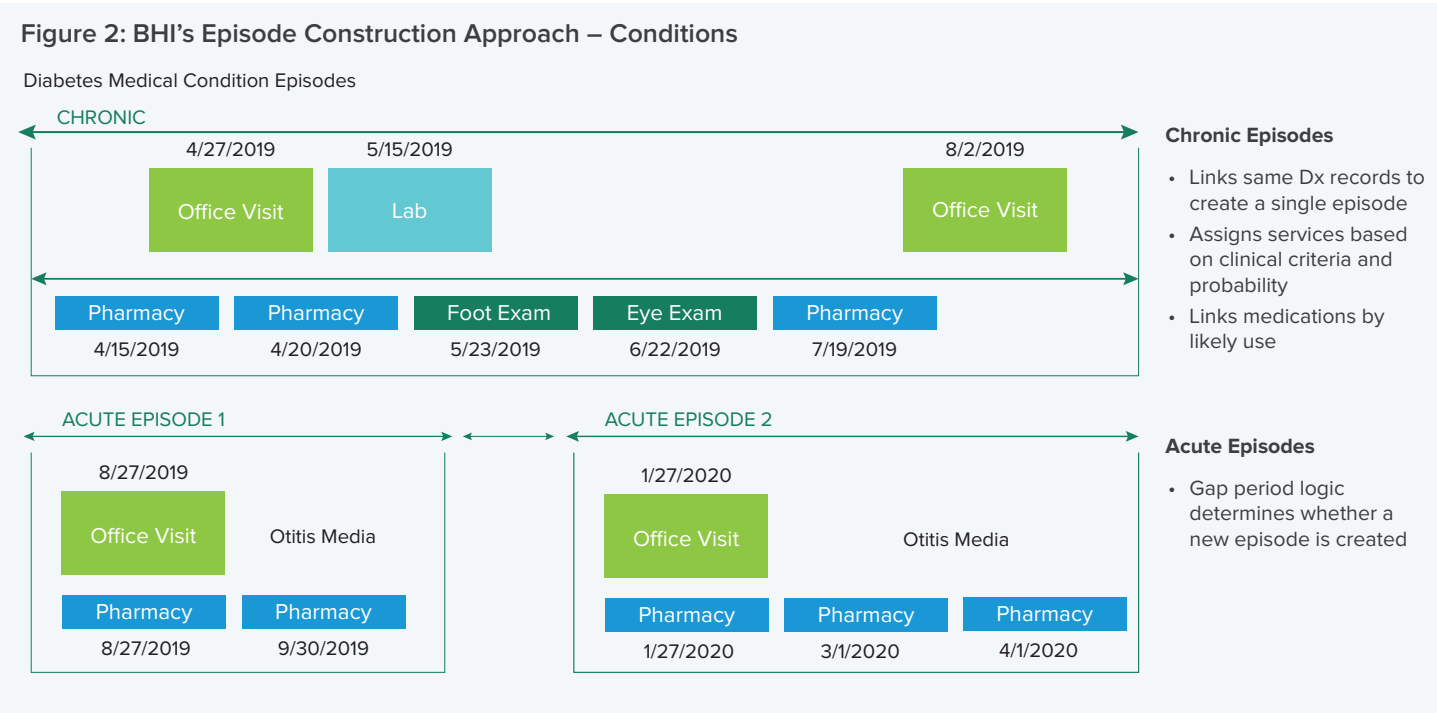




Nuance and Flexibility in Defining Events

“Events” under the grouper are inpatient admissions or ambulatory encounters during which one or more interventions may be provided to diagnose or treat one or more conditions. As such, they provide a more nuanced view of a trigger – the event that alerts users to a new care episode – and a detailed view of related services both prior to the trigger episode and afterward.

To the extent possible, our EoC Grouper maps transaction codes of different types with the same meaning to the same category, regardless of code source or version. For example, CPT and ICD procedure codes for coronary bypass surgery are mapped to the same grouper service category. As a result, surgical procedures can be compared using either code set.



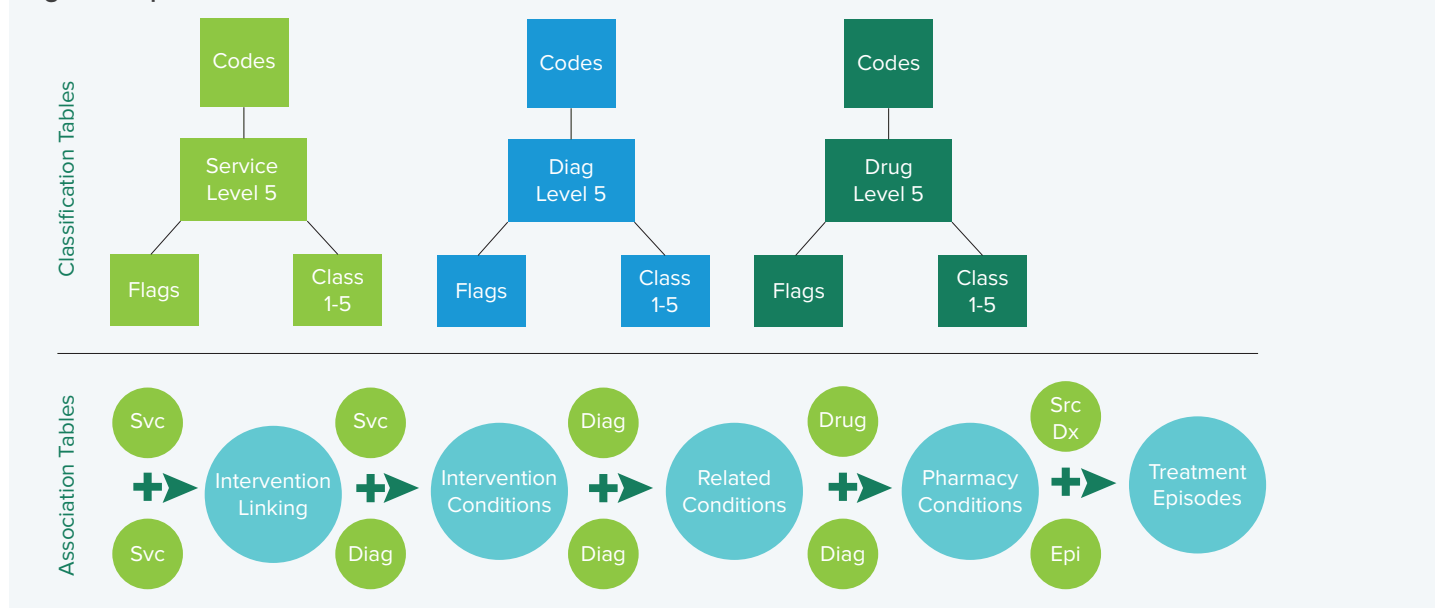
Classifications and Associations

The EoC reference sets control how interventions, conditions, and episodes are constructed. There are two types of reference data populated by the statisticians and clinicians: classifications and associations. Classifications group medical codes into clinical categories and identify how that category should be processed – for example, the clean period around a diagnostic group. Associations link clinical categories to other clinical categories, such as complications to primary conditions.

There are three sets of clinical classifications: services, diagnosis, and drugs. Each is divided into five tiers, or levels, with increasing specificity. Level 5 is the most granular; it is where service types, subconditions, or drug types are described. Medical codes and processing flags are also linked to level 5.

There are five sets of clinical associations. Service to service links secondary services such as anesthesia to primary services such as surgeries. Service to diagnosis links the services on an intervention to the diagnostic categories on that intervention. Diagnosis to diagnosis links secondary conditions such as pain to primary conditions such as fractures. Drug to diagnosis identifies the conditions a drug could be used to treat, in some cases imputing a condition where necessary. Finally, the service and diagnosis links to treatment episode associations which services and conditions are relevant to a treatment episode.

Figure 4: Episode Reference



Conclusion

Due to extreme downward pressures on cost and the dramatic drop in the fortunes of physician practices and hospitals, providers and payers will be incented to work together as never before to deliver care more efficiently and effectively. It seems probable that some form of bundled payment based on care episodes and shared risk will be far more prominent than it is today, even eclipsing fee-for-service in the long run. Likewise, chronic care management is poised to make a giant leap forward, as getting hold of health spending is impossible without addressing the fact that nearly half of American adults has at least one underlying health condition.

In this scenario, information and analytics will be king, as you cannot succeed in episodic-based payment if you don't know what goes into a care episode from the trigger event to a patient's final interaction with the health system. And you can't establish a network of the most qualified health professionals and facilities if you don't have clinically valid, meaningful, and actionable data on the cost, quality, and outcomes of hundreds of care episodes.

Groupers provide these tools, and they are proliferating. BHI's stands out for its transparency, adaptability, and inclusion of both procedures and conditions. The EoC Grouper is a vital tool for designing and evaluating care management programs and provider networks. Its clinical logic is presented in an intuitive, easy-to-understand manner, offering a window on the entire course of treatment that provides insights for new workflows; better allocation of resources; and new options for preventing, managing, and curing serious health conditions at a sustainable cost.