White paper

Symmetry® Episode Treatment Groups®

Measuring health care with meaningful episodes of care

Identifying clinical episodes of illness, and the services involved in their diagnosis, management and treatment is a key business need of any organization seeking greater transparency into the cost and quality of health care delivery. Episodes of care provide a valuable unit of analysis to measure the utilization of health care services directed toward specific clinical conditions.

Episode Treatment Groups (ETG) were introduced to the market in 1993 and rapidly became widely used for defining episodes of care. Such analysis relies on clinically valid classifications of a condition and its related service claims. By organizing related claims into homogenous units that describe complete episodes of care, ETG provides the basis for valid comparisons. Episodes are created by assigning all inpatient, outpatient and ancillary services to mutually exclusive and exhaustive categories, which are meaningful to care providers. Case mix adjustment is enabled by recognizing the necessary variation in episode cost driven by patient-specific complications and comorbidities. Non-elective treatments can also be considered in episode comparisons. ETG covers the full breadth of health care services; acute and chronic conditions as well as preventive services can be measured and compared.

As a market leader, ETG is licensed by more than 150 organizations in the United States, which collectively serve more than two-thirds of the insured population. When combined with other Symmetry products, ETG anchors a comprehensive analytic suite, able to address a wide array of business needs from a single data input file.

ETG is licensed by more than **150** organizations in the United States, which collectively serve more than **2/3** of the insured population.

ETG covers the full breadth of health care services:

- Acute conditions
- Chronic conditions
- Preventive services

This paper will provide an overview of how the ETG software supports:

- Valid measurement and comparison of providers based on cost of care
- Improved understanding of disease-specific risk to support case management
- Enhanced ability to track plan performance and trends around specific diseases and episodes

Episode treatment grouping

A number of factors differentiate ETG in the market:

- Rigorous clinical content, matching a member's diagnoses and procedures to appropriate episodes of care
- Inclusion of all relevant services into episodes of care, including ancillary, pharmacy, inpatient and outpatient
- Use of both diagnostic and procedural information to more precisely assign individual services to episodes
- Dynamic grouping windows which allow the data itself to determine episode length and free the model from assumptions regarding clinical practice patterns
- Recognition of complications, comorbidities and treatment indicators that may influence an episode's costs and utilization
- Severity assignment for an episode that considers comorbidities and complications, resulting in more homogenous units
- Flexible treatment of chronic episodes of care, recognizing the ongoing nature of these conditions
- Seamless integration with other Symmetry products for consistent analysis
- Transparency that allows customers to access the clinical content behind ETG, supporting an understanding of grouped results

Accounts for gaps in coverage

More complete data results in more accurate measurement of cost however variable enrollment in coverage can influence data completeness. The ETG software supports a flexible approach by first determining whether a member is eligible based upon enrollment during the time frame. When gaps in coverage exist, users determine how large a gap is acceptable. ETG then reviews each claim, building an episode by identifying an anchor record and continuing to collect all clinically relevant claims until an absence of treatment — or clean period — is detected.

ETG classifies claims to one of five record types:

- Management
- Surgery
- Facility
- Ancillary
- Pharmacy

Building an episode

ETG classifies all claims as either anchor or non-anchor (ancillary and pharmacy) records. Anchor records, defined by a face-to-face encounter between a clinician and a patient, form the framework around which episodes are built. This requirement ensures that the identified medical conditions reflect real clinical judgment in diagnosis and treatment planning for that individual.

Prior to identifying claims as anchor records, claims are first assigned to one of five record types: management, surgery, facility, ancillary and pharmacy. Record type assignment depends upon a combination of the provider type and procedure codes on the claim.

Anchor records are identified as one of the following:

- A claim submitted by a clinician for services related to the evaluation of a member's condition (management record)
- A claim submitted by a clinician for surgical or related procedures (surgery record)
- A claim submitted by a treatment facility for room and board services (facility record)
- A claim submitted by a hospital for emergency room services (management record)

Only anchor records can start an episode. Following episode initiation, the grouper evaluates every ancillary and pharmacy claim (non-anchor records) against all episodes to determine the best fit, and groups each accordingly. ETG evaluates all of the clinical information available for each record to determine optimal grouping through a proprietary hierarchy, which leverages the known clinical relationships between diagnoses, services and provider types. The results are clinically homogenous, statistically stable episodes. Each episode is assigned to an ETG base class, which identifies the medical condition. Examples of ETG base classes include diabetes, hypertension and chronic obstructive pulmonary disease.

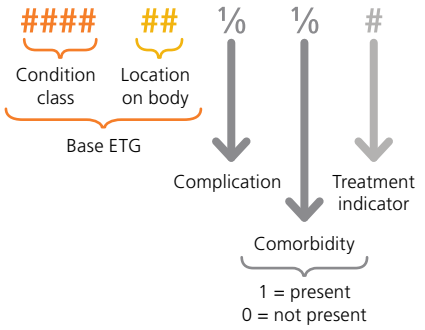
Innovative ETG numbering system communicates severity of conditions

To achieve clinical homogeneity, the grouper reviews episodes for the presence of three factors that could influence the amount of resources required to treat the episode: comorbidities, complications or non-elective treatments, including major surgery or active management of cancer. Any one of these factors would generate a separate classification of the episode, characterized by a nine-digit ETG numbering approach.

Figure 1 demonstrates how the nine-digit ETG number conveys the presence of any of these conditions.

The first six digits define the ETG base class, including information about the part of the body affected. The seventh and eighth digits are set to 1 if the episode has, respectively, complications or comorbidities, and to 0 if these factors are not present. The term "complications" in this context does not indicate an error in treatment; rather, a value of 1 in the seventh digit indicates the episode included diagnostic markers of a disease state requiring more complex care. Notably, comorbidities and complications are ETG base class specific, as a medical condition may affect some episodes but not others.

Figure 1.
ETG numbering system



The ninth digit reflects the presence or absence of any treatment indicators, which categorize services such as defining surgeries and active management procedures (chemotherapy and radiation therapy services). A value of 1 through 5 indicates specific groupings of similar procedures. The meaning of the code is specific to the ETG base class, as seen in Table 1.

Table 1: Treatment indicators and their meaning

Base ETG description	Treatment	Treatment indicator
Malignant neoplasm of large intestine	Without surgery, without active management	0
	With surgery, without active management	1
	Without surgery, with active management	2
	With surgery, with active management	3
Ischemic heart disease	Without surgery	0
	With angioplasty	1
	With coronary artery bypass graft (CABG)	3
	With valve surgery	4
	With valve surgery and CABG	5
Chest trauma, closed	Without surgery	0
	With surgery	1

Each ETG base class is mapped to one major practice category (MPC), which represents a medical or surgical specialty area. Because most medical specialties correlate to organ systems, MPCs typically follow body systems as well. ETGs are also mapped at the nine-digit level into forty-two Primary Condition Categories which allow for aggregation of conditions which cross specialties and organ systems such as cancer and infectious diseases. Users can determine the optimal aggregation system for their business need.

Assigning claims to episodes involves many intermediate decision points. For example, if a pharmacy claim is eligible for two different episodes, a clinically based ranking is used to determine assignment. Similarly, ETG accommodates multiple concurrent episodes and varying diagnostic specificity by making sequential grouping passes through the claim stream. With each pass through the claims, ETG examines diagnosis codes in descending order of their clinical specificity; the most specific diagnosis codes, which convey clear clinical concepts, are assigned to anchor episodes first, followed by codes that correlate with non-specific clinical syndromes. On the final grouping pass, sign and symptom codes are assigned to ETG episodes, as these diagnoses are vague and general. Procedure codes on each claim are examined as well, with the resulting intersection of procedure eligibility and diagnosis eligibility yielding the most specific ETG assignment.

It is critical that each claim's dollars only be assigned to one episode so its associated costs are not double-counted. However, claims frequently have multiple valid but unrelated diagnosis codes that should be considered. In these cases, ETG creates a phantom grouping which records the clinically valid relationship between the service and the episode but does not assign the dollars from those claims to the episode. As additional claims are reviewed, they may be assigned to this episode. If the episode based on a phantom anchor does not attract any other claims that are associated with costs, then it remains a phantom episode at zero cost. Users have the option to include phantom episodes in the summary file.

ETG recognizes complications, comorbidities and treatment indicators that may influence an episode's costs and utilization.

Some claims cannot be grouped to an episode. For example, screenings and immunizations incidental to other services could be indicative of preventive medicine or health promotion. They do not create an anchor record, but instead are assigned to a non-episodic ETG base class and included in the output file. Similarly, prescriptions for ongoing conditions that were not associated with an office visit are assigned to a specific Rx-only ETG base class.

Pharmacy records are categorized using a proprietary drug coding hierarchy that is compatible with ETG methodology and major practice categories, as well as current medical and drug information literature. The hierarchy is continually updated to reflect the evolution of pharmacotherapy and new drug products. Pharmacy claim records that cannot be legitimately grouped are assigned as orphan drug records.

Dynamic clean periods

Episodes often occur in a discrete time frame. To build a complete episode, a unique time frame must be defined. As ETG reviews the claims, it considers the length of time since a relevant claim was identified, called the clean period. To be clinically meaningful, the clean period is specific to each ETG base class. For example, the clean period for brain trauma is 90 days, while the clean period for migraine headache is 60 days. Most acute conditions have a clean period less than 180 days. The shortest is acute alcohol intoxication, with a clean period of only seven days.

Episodes also have ETG base class-specific drug clean periods within which pharmacy claims must fall to be associated with the episode. Each episode is framed by a start date, defined by the earliest anchor record in the episode, and an end date. The end date is defined as the latest anchor record in the episode. If both the start and end dates are known, the episode is complete.

Episodes with an unknown start date, an unknown end date, or both, can be considered complete if they include a full year of data. The value of the variable episode type identifies the type of complete episode — e.g., clean start, unknown finish (full year of data) — enabling users to easily select the appropriate episodes. Episode type also identifies the reason an episode is incomplete. It is essential to compare only complete episodes with other complete episodes.

Handling chronic conditions

To compare treatment of ongoing chronic conditions, ETG partitions episodes into year-long, separate episodes. ETG supports several different methods for users to define the year. Users who know or suspect their data are more complete at certain points, or who have long run-out periods, or whose members turn over frequently, may choose different options.

As medical conditions progress over time, the episode may shift. Once data are parsed into years, the member may, for example, have an ETG base class of non-malignant neoplasm of prostate in one year, then malignant neoplasm of prostate in the next. These situations can be easily identified using the chronic ID field in the summary file, and analyzed using the output file that shows all prior ETG assignments.

ETG also offers an *unlimited episode length* option, which allows episodes to be longer than one year for clients who are interested in analyzing chronic conditions such as diabetes or hyperlipidemia.

Severity measurement method

Many factors may have legitimate effects upon ETG episode cost. Both a provider's clinical practice decisions and efficiency as well as the clinical elements of the patient's condition may drive higher or lower episode cost. ETG severity adjustment aims to recognize the medically necessary variation in total episode cost that is due to patient specific factors independent of provider discretion. For example, the average type 1 diabetic patient is necessarily more expensive to manage than the average type 2 diabetic due to the medically necessary requirement for insulin in the type 1 patient. By recognizing and quantitatively assessing these medically necessary factors, ETG's severity adjustment promotes development of more clinically homogeneous sets of episodes and further isolates provider discretion as a driver of cost variation.

Severity adjustment relies upon linear regression models to quantify the impact of both demographic and clinical factors that may influence total episode cost. Demographic factors include age and gender; clinical factors include condition status and comorbidity markers associated with an episode. Condition status markers are sets of diagnosis codes that indicate clinically distinct subsets within an ETG base class. These subsets indicate either distinct pathophysiology requiring distinct medical management or a distinct stage of disease. For example, Crohn's disease and ulcerative colitis are both forms of inflammatory bowel disease and are categorized within ETG 475300. Since Crohn's and ulcerative colitis may require very different therapeutic approaches, condition status markers are used to recognize that influence.

Comorbidity markers, by contrast, quantify the influence of concurrent medical diagnoses across ETG base classes. Prior to the 10.0 version of ETG, this effect was assumed to be positive; comorbid medical conditions were considered valid only if they increased average episode cost. With the 10.0 version, both negative and positive weighted comorbidities are allowed. This change in modeling logic reflects the underlying realities of ETG's "winner takes all" grouping assumption and also reflects the clinical complexity of caring holistically for patients with multiple comorbid medical conditions. The end result is a more accurate and reproducible linear model.

For the 10.0 version of ETG, grouped data for episodes from a 9.7 million member data set was used to identify all naturally occurring relationships between condition status markers, comorbidity markers and episodes. Prior ETG severity models used a pre-determined set of hypothesized relationships. Opening up the model to a broader set of relationships allowed the data itself to generate a broader range of valid hypotheses. Advanced regularized regression techniques were then applied to facilitate an efficient process of marker selection and hypothesis testing. The risk of overfitting was mitigated by constraints upon marker selection and the magnitude of weights. These models were then cross-validated in order to determine the optimal level of variable selection and model restraint. The result of this process was a conservative set of statistically valid markers.

Following statistical analysis, a team of clinicians reviewed the marker set to identify clinically invalid markers and remove them from the model. Clinically spurious relationships may arise due to artifacts of coding behavior (such as the AIDS episode being modified by the diagnosis code for HIV disease without AIDS) or due to random associations without clinical meaning. These clinically invalid relationships were excluded from modeling. Following a series of iterations, a set of both clinically and statistically valid markers emerged.

ETG matches a member's diagnoses and procedures to appropriate episodes of care.

For an individual episode, severity scores are calculated by identifying all of the relevant demographic, condition status and comorbidity markers associated with the episode and then summing their weights. Because severity scores and severity levels are normalized within an ETG base class, trending of severity scores over time can show the evolution of medically necessary cost. For example, a 61 year old man is being treated for ischemic heart disease and secondary hypertension. The heart disease is stable and managed medically. The presence of the secondary hypertension adds some complexity and necessary cost to medical management of his heart condition.

In the second year, he suffers an acute myocardial infarction and develops cardiomyopathy. The acute care and escalated ambulatory monitoring necessitated by this event adds substantially to necessary episode cost. This is reflected in a five-fold increase in his severity score and a higher severity level categorization.

The third year of this member's care demonstrates a critical concept when measuring healthcare costs episodically. During the third year, this man's heart disease stabilizes however the cardiomyopathy remains as a comorbidity. A cardiologist treating this member will evaluate him holistically; the presence of cardiomyopathy may add clinical complexity to the overall clinical picture but many of the required services will overlap with services required in the treatment of ischemic heart disease. A single stress echocardiogram, for example, will give information relevant to both cardiac conditions. Because ETG assigns all of the dollars from a single service to just one episode, this overlap in the clinical nature of ischemic heart disease and cardiomyopathy results in a reduction to episode-based cost measurement even as total cost of care increases. More serious conditions tend to siphon off both clinical attention and resources from the less serious conditions. Thus, the negative weight associated with cardiomyopathy quantifies this siphoning effect, on average, and reflects the relative competition for services between the cardiomyopathy and the ischemic heart disease episodes.

Table 2: Severity score example

ETG	Description	Episode	Severity score	Severity level
386500010	Ischemic heart disease, w/o complication, with comorbidity, w/o surgery	4030013	0.5488	1
386500110	Ischemic heart disease, with complication, with comorbidity, w/o surgery	4030014	2.9456	3
386500010	Ischemic heart disease, w/o complication, with comorbidity, w/o surgery	4030015	0.4974	1

Episode 4030013		
Demographics		Weight
Male	61	0.2623
Condition Status		
None		0.0000
Comorbidities		
80222	Secondary hypertension	0.2865
Total Severity Score		**0.5488**

Episode 4030014		
Demographics		Weight
Male	62	0.2623
Condition Status		
70083	Acute myocardial infarction	2.4482
Comorbidities		
80222	Secondary hypertension	0.2865
80173	Cardiomyopathy	-0.0514
Total Severity Score		**2.9456**

Episode 4030015		
Demographics		Weight
Male	63	0.2623
Condition Status		
None		0.0000
Comorbidities		
80222	Secondary hypertension	0.2865
80173	Cardiomyopathy	-0.0514
Total Severity Score		**0.4974**

Severity scores are normalized to each ETG base class and can be used to quantitatively compare episode costs within a base class. Severity scores are not intended to compare episode costs across different ETG base classes. A severity score of 1.0 means that the episode has average expected resource costs, compared with other episodes of the same ETG base class. Severity scores are relative: a severity score of 0.5 means that the episode has half, while a severity score of 2.0 means the episode has double the expected resource costs.

In addition to a severity score, each episode is assigned to a severity level. Optimal severity level categories identify clustering of episodes with similar severity scores. The boundaries of these categories were determined through a cluster optimization method which minimizes variability within a cluster while maximizing the distinction between clusters.

Each ETG base class was assigned as many as four severity levels, determined by the condition's unique pattern of increased severity. The severity levels are therefore closely tied to actual cost patterns which would not be the case if episodes were divided according to an arbitrary measure such as quartiles.

Outliers

Each combination of ETG base class, severity level and treatment indicator is assigned trim points that frame the normal range of costs for the combination. Episode costs outside the range are flagged as outliers. (Since complications and comorbidities are factored into the severity, as described in the previous section, they are not considered again when calculating outliers.) Outliers can be the result of inappropriate treatment, rare extremely complicated cases or simple coding error.

Trim points can be customized to create customer-specific outlier ranges. Using complete non-outlier episodes, users can calculate a risk-adjusted value for cost or utilization measures that a provider's immediate peers would be expected to generate if treating the same set of episodes within an ETG base class, with the same case mix as measured by episode severity. Using this measure, a provider's utilization decisions and costs can be validly compared with his or her peers.

ETG produces several output files enabling flexible and detailed analysis.

Confinements

ETG builds individual confinements based on all claims associated with an inpatient stay, determined by the admit date and discharge date. The software then reviews all other claims, such as specialty inpatient consults, that occur within that time frame and assigns them to the confinement. As a default, each facility record would trigger a discrete confinement. Users can select the *link facility records* option to include facility records within the days allowed between confinements, with the same provider ID, and with the same bed type value, to join the confinement. The only exception is facility records that would extend the confinement beyond a year, unless the *unlimited episode length* option is activated.

Sub-Episodes

As an aggregator, ETG's primary purpose is the flattening of highly complex raw claims data into manageable units of analysis – the episodes of care. The required level of aggregation, however, may vary depending upon the business need. For example, the clinical condition of coronary atherosclerosis is generally a stable and asymptomatic condition which requires periodic outpatient visits for medication management and laboratory monitoring. At times, however, coronary atherosclerosis can become highly unstable and symptomatic during an acute myocardial infarction resulting in hospitalization, emergency angiography and perhaps emergent coronary artery bypass grafting. The latter event forms a clinical episode in itself, a subset of the chronic ischemic heart disease episode, which may be worthy of measurement. ETG sub-episodes exist to do just that.

With the 10.0 release, two types of ETG sub-episodes have been developed. Acute-on-chronic sub-episodes, like the acute MI example above, capture the clinical care around an acute decompensation of a previously stable chronic disease. Chronic sub-episodes are designed to capture the portion of chronic disease care that is focused upon a specialty-specific aspect of a multi-system disease. Diabetic retinopathy, for example, is primarily managed by ophthalmologists as part of the overall diabetes care for a patient. The diabetic retinopathy sub-episode allows for parsing the portion of the diabetes episode that is specific to the eye disease.

Table 3: Sub-episode categories

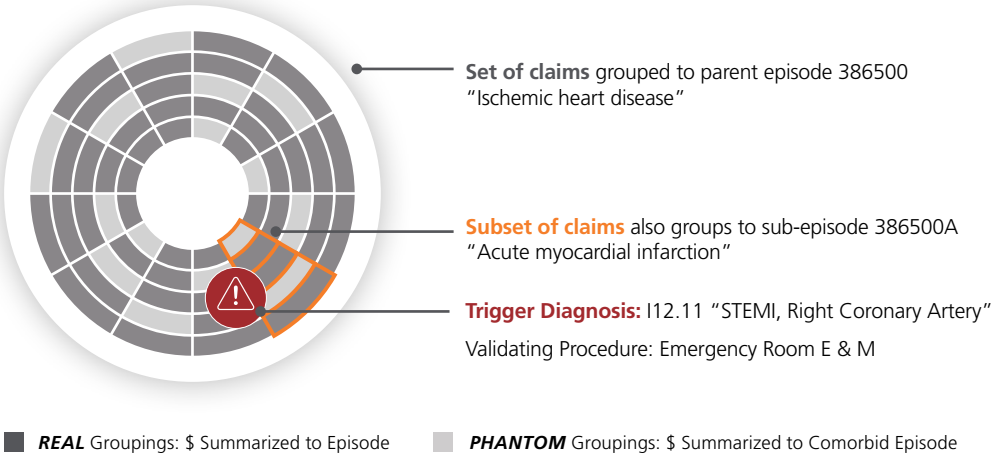
Sub-ETG Category	Parent ETG	Sub-Episode Type
Depression with acute decompensation	**238800** Mood disorder, depressed	Acute-on-chronic
Bipolar disorder with acute decompensation	**238900** Mood disorder, bipolar	Acute-on-chronic
Acute thromboembolic stroke	**316000** Cerebral vascular disease	Acute-on-chronic
Acute hemorrhagic stroke	**316000** Cerebral vascular disease	Acute-on-chronic
Acute myocardial infarction	**386500** Ischemic heart disease	Acute-on-chronic
Acute congestive heart failure	**386800** Congestive heart failure	Acute-on-chronic
Asthma exacerbation	**438800** Asthma	Acute-on-chronic
COPD with acute exacerbation	**439300** Chronic obstructive pulmonary disease	Acute-on-chronic
Cirrhosis with acute decompensation	**521800** Cirrhosis	Acute-on-chronic
Acute-on-chronic renal failure	**555400** Chronic renal failure	Acute-on-chronic
Diabetic ketoacidosis	**163000** Diabetes	Acute-on-chronic
Diabetic hyperosmolar non-ketotic coma	**163000** Diabetes	Acute-on-chronic
Diabetic retinopathy	**163000** Diabetes	Chronic

Triggering sub-episodes

ETG sub-episodes represent clinical events that are nested within a broader ETG episode referred to as the parent episode. No claim will be grouped to a sub-episode (either through a real or phantom grouping) unless it has first been grouped to the parent episode. In the case of the acute MI cited above, all claims which group to the acute MI are also part of the broader ischemic heart disease episode. Sub-episode grouping occurs after episode grouping and has no effect on the episodes reported in ETG Summary.

During sub-episode formation, the grouping engine first identifies ETG episodes which are eligible for sub-episode logic. If such an episode is identified, the engine then searches that episode's anchor records for a diagnosis code which triggers the sub-episode. If a triggering diagnosis is identified, the procedure code and the provider specialty upon the claim are then examined. Both must validate the existence of a valid sub-episode. Procedure code validation ensures that the service which is rendered meets the clinical definition of the sub-episode event in terms of acuity. For example, an office visit is not a clinical setting compatible with acute myocardial infarction; an indication of appropriate clinical acuity is required. Provider specialty validation becomes more important in the chronic sub-episodes where the desired outcome is parsing multi-specialty care.

Figure 2. Sub-episode visualization



Sub-episode windows

Once a claim record has been identified which triggers and validates a sub-episode, static grouping windows are set around that claim record for gathering claims. These static grouping windows can be configured by users to suit their unique business needs. For acute sub-episodes, all claims which grouped to the parent episode (either real or phantom) within the grouping windows are gathered to the sub-episode. For chronic sub-episodes, the procedure codes and provider specialty upon claims within the parent episode must be defined as a target for the sub-episode.

Outputs

ETG produces a variety of output files. Users can confine their analyses to the main summary file, or link multiple output files to analyze the data for a wide range of purposes.

The primary output file is the *summary file*, used to analyze data by defining episodes of care as the medically meaningful unit of analysis. The precise configuration of the summary file is determined by whether various options were selected. For example, the *summarize complete episodes only* option excludes episodes that have unknown start or end dates. These episodes may not have accrued all the relevant costs, so they could be misleading for comparative purposes.

The *episode condition status file*, the *episode comorbid file* and the *episode treatment file*, provide additional information about the complications, comorbidities and treatment indicators associated with each episode, respectively.

In addition, ETG produces a *patient comorbid file* of all comorbidities for each member. This file can be used as an input for future runs, to make sure a member's underlying health status is factored into disease severity.

The *episode ETG file* presents all the episodes that shifted ETG base class during the grouping process. Analyses will demonstrate the disease progression and utilization pattern of the underlying condition.

The *annual file* includes summary information for distinct 12-month intervals. Ungrouped ETG claims and error ETG claims are included in this file. Therefore, it allows for analysis of members' complete costs, including those that do not, for example, fall within the clean period of a specific episode.

The *phantom file* presents phantom groupings, based on claims that were relevant to two or more episodes, but whose costs could only be grouped to one episode to avoid double counting. These data can be linked to summary file episodes that contain only ancillary or pharmacy records to assess care and utilization for the entire episode.

Confinements can include episodes from many ETG base classes. Therefore, the *confinement file* enables users to analyze all costs associated with the inpatient stay, whether or not the confinement is related to an episode.

The *episode attribution file* provides a number of data elements to support varying provider attribution methods. For instance, while ETG default logic assigns the clinician with the greatest sum of cost for an episode as the responsible provider, the episode attribution file provides additional data points regarding encounter types, encounter counts and cost types by provider. This file provides flexibility for users to attribute episodes in the manner most fitting to their business needs. All output files are described in detail in product documentation, along with business applications.

Sub-episode information is reported out independently in a *summary file*, an *attribution file* and a *treatment file* whose layout and purpose largely mimics the companion files for the regular ETG episodes.

Finally, users may want to determine whether a claim record was included in an episode, a confinement or both. An *ETGINFO* set of fields provides a link between the claims data input and all output files. This function allows the user to investigate the grouping results in full detail.

Specialty pharmacy

Costs associated with specialty pharmacy represent an increasingly significant portion of a population's health expenses. Many organizations seek methods to quantify and monitor these specific costs and identify members who use specialty drugs. Although there is no consensus on the definition of a specialty drug, the term is usually associated with drug products that are high cost, require special manufacturing, administration, or monitoring, or are used to treat a rare or complex condition.

ETG allows users to easily identify specialty pharmacy claims (as NDC or HCPCS codes) and associated episodes in ETG output with specialty drug flags. Users have the option to use a default clinically verified specialty drug list, or their own custom specialty drug list, to define which claims and associated episodes are assigned a specialty drug flag in output.

ETG integrates with other Symmetry products for enhanced analysis.

Summary

ETG enables a detailed level of analysis and comparison of health care utilization. The ETG numbering system streamlines analysis of episodes and directly presents factors that contribute to case mix. These factors are easily linked to related output files.

The severity scores provide unique ability to differentiate between episodes based on the member's underlying condition, episode-specific comorbidities and demographics. The severity levels reflect the clinical reality of each ETG base class — some have little variation, while others demonstrate a wide range of utilization requirements. Similarly, each ETG base class has a calibrated "normal" range of costs, outside of which episodes are deemed outliers.

ETG reflects the Symmetry Suite's commitment to flexibility — users have many options to configure particular features according to their business or analytic needs. This flexibility, along with clinical integrity and innovative new features, has ensured the continued status of ETG as a market leading analytic product.

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