

# INGENIX<sup>®</sup>

## Symmetry Suite 7.0

### Continuing a History of Innovation

*The information in this document is subject to change without notice.*

*This documentation contains proprietary information, which is protected by U.S. and international copyright. All rights are reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, without the express written permission of Ingenix, Inc. Copyright 2006 Ingenix, Inc.*



## Symmetry Suite 7.0 – Continuing a History of Innovation

Measuring value, understanding the services rendered by networks and providers and assessing risk are critical needs of any health care organization. Purchasers, consumers and patients demand increased transparency into the cost, quality and service of health care delivery. At the same time, expenditures on health care continue to escalate while evidence persists on avoidable costs and the gap between how medicine should be delivered and current practice. Measuring health care and providing incentives for high performance are seen as critical tools in addressing differences in the cost and quality of care and demonstrating value.

For more than a decade, the Symmetry Suite from Ingenix has offered solutions to health care organizations for measuring value and understanding costs, quality and risk.

Symmetry's flagship product, Episode Treatment Groups (ETGs) was introduced in 1993 and quickly became the industry standard for episodes of care. In 2001, Symmetry broadened its offerings, adding Episode Risk Groups (ERGs) and later, Pharmacy Risk Groups (PRGs) – tools to assess patient and population risk. More recently, Symmetry added Evidence-Based Medicine (EBM) Connect, providing the capability to compare patient health care with research-based guidelines to measure quality in the care delivered by health plans and providers. The result is a comprehensive suite of products, supporting a wide array of business needs, all leveraging a single methodological platform.

A trademark of Symmetry has been its ability to evolve and innovate to enhance product offerings and respond to customer needs. Figure 1 highlights key milestones in the growth and development of Symmetry Suite products. For

ETGs, each version introduced new clinical frameworks and enhancements to better support the configuration around episode grouping and the outputs. ERGs and PRGs have leveraged ETG advances to improve accuracy and also reflect the impact of evolving medical and pharmacy technologies on measuring patient risk. EBM Connect has offered an expanding set of clinical conditions and rules, adopting national standards and guidelines, and continually assessing the validity and appropriateness of existing product content. Symmetry Suite products are now licensed by more than 300 health care organizations in the U.S. serving hundreds of millions of individuals. As health care information needs evolve, exciting new sources of clinical data become readily available and customers demand new solutions, Ingenix will continue to innovate.

### SYMMETRY HISTORY

Figure 1

1993	Introduction of Version 1.0 of ETGs
1994-1998	Versions 2 and 3 provide enhancements to methods and grouper software
1999	Version 4.0 - update to the underlying clinical foundation and enhancements to the Symmetry Hierarchical Drug Classification System
2001	Version 4.2 – introduction of ERGs – an episode-based approach to measuring health risk
2003	Version 4.5 – introduction of PRGs – a pharmacy-based approach to measuring health risk
2004	Version 5.0 – significant enhancements to grouper software and usability, including API
2005	Version 5.1 – introduction of EBM Connect – measuring quality using evidence-based and clinical guidelines
2006	Version 6.0 – enhancements to all products
2007	Version 6.5 – updates to EBM Connect and support for multi-threading for all products

Ingenix' vision and road map for 2007 and beyond include enhancements to all Symmetry Suite tools, with perhaps the most significant change to ETGs in more than a decade to be introduced with the release of Version 7.0. The remainder of this briefing shares highlights of the Symmetry Suite road map, the upcoming Version 7.0 release, and new product offerings under development for the future.

## Evolving to Meet Market Needs – Symmetry Version 7.0

The 7.0 release will introduce exciting changes to all of the Symmetry Suite tools. The centerpiece of 7.0 will be further enhancements to how ETGs work, in particular, how differences in severity are captured for an episode of care. ERGs and PRGs will use these changes to improve their predictive accuracy. EBM Connect will continue to track and incorporate national standards and will include new rules editing functionality.

### ETGs and Symmetry Suite 7.0

ETGs are a basic condition classification methodology that combines related services into a medically relevant unit describing a complete episode of care. Approximately 600 separate ETGs are defined, describing conditions such as diabetes, congestive heart failure, acute bronchitis and major trauma and linking the services involved in diagnosing, managing and treating those conditions. The clinical richness of ETGs, its reliance on information readily available on medical and pharmacy claims, and its potential as a tool for describing relative patient morbidity makes it a sound basis for measuring and understanding value in health care.

A number of factors differentiate ETGs in the market:

- Strong clinical content, matching a patient’s diagnoses and procedures to appropriate episodes of care;
- Use of both diagnostic and procedural information to more precisely assign individual services to episodes;
- Dynamic clean periods, supporting more accurate results around complete episodes of care;
- Recognition of the different complications and co-morbidities that can impact an episode’s costs and utilization;
- Seamless integration with other Symmetry engines for consistent analysis; and
- Transparency – customers have access to the clinical rules and content behind ETGs, supporting an understanding of grouped results.

Each of these strengths will continue to serve as the core of the ETG methodology going forward.

One area where ETGs will be enhanced for 7.0 is how co-morbidities, complications and severity within an episode are handled – enhancements providing significant value in how grouping results can be applied. ETGs have always included a robust approach to assessing complications, co-morbidities and patient risk. Examples of episode families that have recognized these factors are highlighted in Figure 2. Symmetry 6.0 introduced a further option for risk adjustment within an ETG, using ERG risk level. ERGs measure a patient’s overall morbidity based on their observed mix of ETG episodes of care and each member receives a score describing their level of ERG risk relative to other individuals. Version 6.0 uses this risk score to further segment patients within selected ETGs. In this way, where general levels of patient risk correspond to differences in costs for a particular episode, users can take advantage of these levels and further risk adjust measures within an ETG.

#### Example of ETGs with Complications and Co-Morbidities, Version 6.0

Figure 2

ETG DESCRIPTION (Version 6)
27 - Type I diabetes, with comorbidity
28 - Type I diabetes, w/o comorbidity
29 - Type II diabetes, with comorbidity
30 - Type II diabetes, w/o comorbidity
113 - Alcohol dependence, with complication
114 - Alcohol dependence, w/o complication
390 - Chronic bronchitis, with complication, with comorbidity
391 - Chronic bronchitis, with complication, w/o comorbidity
392 - Chronic bronchitis, w/o complication, with comorbidity
393 - Chronic bronchitis, w/o complication, w/o comorbidity

The current approach to complications, co-morbidities and severity well supports valid measurement. Version 7.0 will improve on this approach and enhance the clinical and

statistical accuracy of the episode results. A further benefit will be an increase in the detail and transparency of the outputs from the grouping process. In particular, Version 7.0 will introduce the following features:

**Base ETGs**—A base ETG will be created for each relevant clinical condition. Diabetes, congestive heart failure and asthma are examples. These base ETGs will also introduce additional clinical detail for some types of episodes. For example, the existing ETG, “Major inflammation, skin and subcutaneous tissue,” will be split into five new base ETGs: Psoriasis, Chronic Skin Ulcers, Acne, Contact Dermatitis, and Other Skin Disorders;

**Further recognition of the relevant complications within each base ETG**—In comparison to the current ETG approach which notes “with complications”; Version 7.0 will note the specific complications observed. Examples of complications for a diabetes episode include diabetic ketoacidosis, diabetic coma, hyperosmolar coma, hypoglycemic coma;

**Further recognition of the relevant co-morbidities within each base ETG**—With the current approach, ETG notes relevant episodes as being “with co-morbidity”. The new release will further identify the qualified co-morbidities for each base ETG and note the specific co-morbidities observed. Example of co-morbidities include hypertension, CAD, CHF, and depression;

**Treatment**—Indicators of the specific surgical and other treatments observed within an episode of care will be noted. Version 7.0 will continue to recognize that a significant surgery was performed for an episode. However, the specific surgery itself also will be described. Procedures such as coronary artery bypass graft, C-section delivery, shoulder arthrodesis, arthroscopy knee with treatment are examples;

**Severity Level**—A severity score and a discrete severity level will be assigned to each episode of care, based on a patient’s age and

gender and the episode’s observed mix of complications and co-morbidities. Treatment indicators will not impact the assessment of relative severity, only complications and co-morbidities. Further, the model used to assign severity level to each episode will be unique to the Base ETG. In this way, ETGs can take advantage of the unique relationships between complications and co-morbidities and a clinical condition in determining levels of severity.

### Enhanced Outputs

Detailed and summary information will be provided for each episode of care. Similar to the current ETG outputs, detailed service records will include episode ID, record type, cluster ID, and other information. Further, for each episode, the base ETG will be noted, along with each of the observed complications and co-morbidities and any relevant treatment indicators. A summary score describing the relative severity of the episode compared to the average severity of all episodes within the base ETG will be available along with a discrete severity level assigned using this score.

Figures 3 and 4 provide examples of the summary information available for each episode. These examples are for demonstrative purposes only and both use Ischemic Heart Disease as the Base ETG and provide different combinations of complications, co-morbidities and treatments. For the first example, a complication of AMI is observed, along with three co-morbidities, obesity, diabetes

#### ETG Version 7.0

##### Example of Detail and Summary Information Available for an ETG – CAD I

Figure 3

Episode	ETG (Base Condition)				Complications			
12345	Ischemic Heart Disease				7171			
Co-morbidities				CALCULATION OF RELATIVE EPISODE SEVERITY				
8055	8007	8010		Indicator	Code	Description	Severity Weight	
Treatment Indicators				Complication	7171	AMI	3.40	
9890	9578			Co-Morbidity	8055	Obesity, Morbid	0.40	
Severity Level				Co-Morbidity	8007	Diabetes	1.80	
1	2	3	4	Co-Morbidity	8010	Depression	0.80	
0-1.5	1.6-3.1	3.2-6.1	>6.1	Treatment	9890	Angioplasty	0.00	
Note – the indicator codes and severity weights used in this example are for demonstration only and do not reflect final coding and weighting approaches.				Treatment	9578	CABG	0.00	
				Demographics	M4554	Male, 45-54	0.40	
				<b>Total</b>			<b>6.80</b>	

and depression. Angioplasty and CABG procedures were also observed during the course of the episode. As shown, this information, along with the patient’s age and gender, contribute to the relative severity score for the episode. Each of the complications and co-morbidities in this example contribute a severity amount to the total score, as does the demographic factor. However, neither of the treatments impacts the assigned severity. The total severity score for this episode is 6.80, suggesting severity for the episode is almost seven times that of the average episode for Ischemic Heart Disease. The severity score results in the highest severity level assignment (level 4). The second example includes no complications and two co-morbidities, resulting in a total severity score of 1.60 and a level 2 severity assignment for the episode.

**Advantages**

This new approach to measuring and recognizing severity within an ETG has several advantages:

**Flexibility in describing the episode**—The current “branching” approach to assigning an ETG to an episode restricts final ETG descriptions to a condition “with and without co-morbidity”, “with and without complications” and “with and without surgery”. In this way, ETGs are limited in the way specific clinical details regarding the episode can be captured and the way these details can be used to distinguish severity. The broad episode definitions users have been accustomed to in the past will continue to be available in Version 7.0, to support linkage to earlier versions and applications that take advantage of these aggregate categories. However, the additional details on severity and complications, co-morbidities and treatments will provide significant flexibility in how episode outputs can be used.

**Increased accuracy in severity adjustment**—Documenting the detailed information regarding the clinical characteristics of an episode will support more accurate modeling of how these characteristics impact the expected resource needs for an episode of care, as described above.

**ETG Version 7.0**

**Example of Detail and Summary Information Available for an ETG – CAD II**

Figure 4

Episode	ETG (Base Condition)				Complications				
24567	Ischemic Heart Disease								
Co-morbidities					CALCULATION OF RELATIVE EPISODE SEVERITY				
8035	8010				Indicator	Code	Description	Severity Weight	
Treatment Indicators					Co-Morbidity	8035	Hyperlipidemia	0.40	
9890					Co-Morbidity	8010	Depression	0.80	
Severity Level					Treatment	9890	Angioplasty	0.00	
1	2	3	4		Demographics	M4554	Male, 45-54	0.40	
0-1.5	1.6-3.1	3.2-6.1	>6.1		<b>Total</b>			<b>1.60</b>	

Note – the indicator codes and severity weights used in this example are for demonstration only and do not reflect final coding and weighting approaches.

**Consistency with other fractures that differentiate**

**ETGs**—Features such as dynamic clean periods, the use of procedural information, the mapping of pharmacy treatments to episodes, and the clinical validity of how ETGs translates diagnostic and other information into unique episodes of care will remain. Changes to how these episodes are categorized, how severity is assigned and the more detailed information available are what defines the enhancements.

In addition to the new approach to categorizing episodes based on severity, users of Symmetry 7.0 will benefit from the following new ETG features:

- Flexible processing of chronic conditions to improve handling of annual, complete episodes;
- Tracking of the history of an episode, describing the list of ETGs it shifts from during the course of episode building;
- Details on phantom episodes, including a phantom summary file;
- Improved, more descriptive, numbering system for ETGs.

## Applications

The new features in Version 7.0 of ETG will support a number of applications for users. For example:

### Provider performance measurement around cost of care—

ETGs are a key methodology in measuring and comparing providers based on cost of care. Valid measures of provider performance demand recognition of any differences between the underlying morbidity, or case mix, of a provider's patients and those of their peers. The enhanced severity information will support more accurate adjustment of differences in case mix between providers and promote more valid comparisons (Figure 5 provides an example).

**Disease-specific risk**—The detailed information on the clinical characteristics of an episode will provide an improved understanding of the level, or stage, of risk related

to a specific condition, supporting improved applications of ETGs for care and case management.

**Financial performance and trends**—Users will benefit from an enhanced ability to track plan performance and trends around diseases and episodes. For example, changes in the relative severity of a health plan's diabetes episodes over time can be monitored. Assessment of the number and mix of different surgical interventions for CAD episodes can be tracked. Costs per episode trends for each base condition can be severity-adjusted to ensure valid comparisons. In this way differences in costs per episode over time due to underlying morbidity can be separated from changes due to other factors, such as service pricing, technology and provider practice patterns.

### ETG Version 7.0

#### Example of Provider Cost of Care Measurement – Ischemic Heart Disease (CAD), Overall and by Severity Level

Figure 5

ETG	Description, Including Severity Level	# of Episodes	Total	Specialist Care	Other Specialty	Lab	Radiology	Hospital	Pharmacy	ER
Cost per Episode of Care										
<b>XXX4</b>	<b>CAD, Level 4</b>									
	Provider Actual	15	7,750	1,200	900	225	150	3,975	900	400
	Peers Expected	300	7,031	1,320	750	180	158	3,357	900	367
	Cost of Care Index		<b>1.10</b>	<b>0.91</b>	<b>1.20</b>	<b>1.25</b>	<b>0.95</b>	<b>1.18</b>	<b>1.00</b>	<b>1.09</b>
<b>XXX3</b>	<b>CAD, Level 3</b>									
	Provider Actual	25	5,590	1,050	820	165	140	2,465	700	250
	Peers Expected	450	5,270	1,134	734	149	163	2,157	656	278
	Cost of Care Index		<b>1.06</b>	<b>0.93</b>	<b>1.12</b>	<b>1.11</b>	<b>0.86</b>	<b>1.14</b>	<b>1.07</b>	<b>0.90</b>
<b>XXX2</b>	<b>CAD, Level 2</b>									
	Provider Actual	50	2,350	575	350	95	80	750	400	100
	Peers Expected	600	2,232	627	300	81	89	644	389	101
	Cost of Care Index		<b>1.05</b>	<b>0.92</b>	<b>1.17</b>	<b>1.18</b>	<b>0.90</b>	<b>1.16</b>	<b>1.03</b>	<b>0.99</b>
<b>XXX1</b>	<b>CAD, Level 1</b>									
	Provider Actual	75	750	220	170	35	25	165	100	35
	Peers Expected	1250	705	240	145	25	30	125	110	30
	Cost of Care Index		<b>1.06</b>	<b>0.92</b>	<b>1.17</b>	<b>1.40</b>	<b>0.83</b>	<b>1.32</b>	<b>0.91</b>	<b>1.17</b>
	<b>CAD, All Levels</b>									
	Provider Actual	165	2,605	542	389	90	70	1,037	355	120
	Peers Expected	2600	2,434	591	336	75	80	884	349	120
	Cost of Care Index		<b>1.07</b>	<b>0.92</b>	<b>1.16</b>	<b>1.21</b>	<b>0.88</b>	<b>1.17</b>	<b>1.02</b>	<b>1.01</b>

Note – estimates for demonstration purposes only. "Provider Actual" describes observed experience for a provider. "Peers Expected" describes experience of a provider's peers for the same mix of ETG episodes. "Cost of Care Index" is the ratio of Actual to Expected.

## ERGs and Symmetry Suite 7.0

ERGs use an individual's episodes of care and the characteristics of these episodes to assess total health risk. While ETGs describe part of a patient's health care experience, ERGs assess their overall level of risk. ERGs provide measures of both retrospective and prospective risk for each individual and also include a number of options to support different business needs. The details on co-morbidities, complications and severity available in Version 7.0 of ETGs will provide significant opportunities for ERGs to increase the accuracy of its predictions of current and future risk. For example, ERGs currently models the contribution of diabetes to overall health risk based on whether the diabetes is insulin-dependent or not and the presence of a co-morbidity. In Version 7.0, different classes of diabetes co-morbidities and complications can be assessed, along with their impact on overall health risk.

In addition to taking advantage of ETG 7.0 enhancements, Version 7.0 of ERGs will also undergo a general recalibration of all model weights using a large managed care database reflecting recent trends and technologies.

## PRGs and Symmetry Suite 7.0

Like ERGs, PRGs assess a member's overall level of health risk. However, while ERGs can use both medical and pharmacy claims in creating measures of risk, PRGs provides accurate risk assessment using only pharmacy information. In this way, risk assessment can be performed in applications where medical claims data is unavailable, inconsistent or less than complete. Similar to ERGs, PRGs also offer an array of modeling options to best meet business needs.

For Version 7.0, no significant changes are being planned for the underlying PRG models currently available. However, the PRGs used by the model will be reviewed and updated to reflect more recent experience. As part of this process, PRGs will employ any recent revisions to Symmetry's Drug Classification System which plays an important role in the underlying methodology for the product. This system is updated on a regular basis to reflect any new agents and changes in how drugs are used. PRGs will take advantage

of these updates. Like ERGs, PRGs will also benefit from a general model recalibration using a large database and recent experience.

## EBM and Symmetry Suite 7.0

For the Symmetry Suite 6.5 release preceding 7.0, EBM Connect will offer an expanding set of clinical conditions and rules, adopt additional national standards and guidelines, and continue to assess the validity and appropriateness of existing product content. Although no additional content is planned for Version 7.0 of EBM Connect, the long-awaited functional enhancement of rules editing is included in this release. This functionality will enable customers to create, edit, and manage both user-created new content and existing content provided by EBM Connect.

## Coming Attractions: A new grouper methodology: Procedure Episode Groups

Health care organizations have adopted a number of solutions for measuring providers based on the quality and cost of care. Many of these solutions are supported by the suite of products described in this briefing. These solutions address well the services provided by primary care practitioners and medical specialists. However, there is an ongoing need for an enhanced unit of analysis for assessing the performance of surgical specialists. In particular, the unique procedural focus of these providers presents a scope of practice that is, in many cases, narrow relative to the episode and patient-based approaches underlying ETGs and EBM Connect. A unit of analysis tailored specifically to the services provided by surgeons and proceduralists will better support value-based measurement for these providers.

Symmetry's Procedure Episode Grouper (PEG) will represent an industry-first effort to provide health care organizations with an enhanced approach to measuring performance for surgical specialty providers. PEG will complement the existing tools included in the Symmetry Suite, providing value to customers and offer a more complete solution in health care measurement.



For Information: 800.765.6696 | [insight@ingenix.com](mailto:insight@ingenix.com)  
Ingenix, Inc. | 12125 Technology Dr. | Eden Prairie, MN 55344  
[www.ingenix.com](http://www.ingenix.com)

Symmetry's PEGs will create a new unit of analysis that can be used to support better measurement for surgical providers. A PEG describes a unique procedure and the services directly related to its performance, including the workup and conservative care prior to the procedure (e.g., prescribing physical therapy before surgical intervention for back pain), the procedure itself, and post-procedural activities, such as repeated procedures, re-admissions, and follow-up care.

The key inputs to PEGs will be the standard outputs from Symmetry's ETG application. Many episodes of care include a therapeutic or other procedure performed by a surgeon. These episodes, and related episodes, also include the services involved in the pre- and post-operative care surrounding the procedure. Using the service-level outputs from ETGs, PEGs will identify major therapeutic procedures and gather associated services to create a procedure-based episode of care.

PEG, which is currently in development, will provide a new unit of analysis to support provider measurement and health care analysis – a unit that complements well the population and episode-based metrics supported by ETGs, ERGs and EBM Connect. Since PEGs will leverage the same methodological platform as the other Symmetry tools, significant advantages for customers will be available to promote consistent approaches in measurement. In future releases, opportunities will also exist to further integrate PEGs with EBM Connect, supporting quality metrics related to the sequence of care surrounding a procedure.

## Summary

Measuring value has taken center stage in much of the debate around improving the financing and delivery of health care in the U.S. All stakeholders have a vested interest in understanding the medical services that are provided to employees, health plan members and citizens and finding ways to promote high quality care, at a reasonable cost, with access to all. Health care information and measurement will play a critical role in forming that debate.

The Symmetry Suite from Ingenix has a long and successful history of providing tools to customers to support valid and practical approaches to health care measurement. The upcoming Version 7.0 release will provide significant enhancements to the Symmetry Suite. The result will be improved solutions for customers and a comprehensive suite of products that support a wide array of business needs, all leveraging a single methodological platform. Going forward, Ingenix will continue to innovate as customers demand new solutions. Version 7.0 brings us to the next step in that evolution.