

# NATIONAL QUALITY FORUM

## Resource Use Measure Evaluation 1.0 January 2011

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

### Resource Use Definition:

- Resource use measures are broadly applicable and comparable measures of input counts—(in terms of units or dollars)-- applied to a population or population sample
- Resource use measures count the frequency of specific resources; these resource units may be monetized, as appropriate.
- The approach to monetizing resource use varies and often depends on the perspective of the measurer and those being measured. Monetizing resource use allows for the aggregation across resources.

**NQF Staff:** NQF staff will complete a preliminary review of the measure to ensure conditions are met and the form has been completed according to the developer's intent. Staff comments have been highlighted in green.

**TAP/Workgroup** (if utilized): Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).

**Steering Committee:** Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

### Evaluation ratings of the extent to which the subcriteria are met (TAP or Steering Committee)

**High (H)** - based on the information submitted, there is high confidence (or certainty) that the criterion is met

**Moderate (M)** - based on the information submitted, there is moderate confidence (or certainty) that the criterion is met

**Low (L)** - based on the information submitted, there is low confidence (or certainty) that the criterion is met

**Insufficient (I)** - there is insufficient information submitted to evaluate whether the criterion is met, e.g., blank, incomplete, or information is not relevant, responsive, or specific to the particular question (unacceptable)

**Not Applicable (NA)** - Not applicable (only an option for a few subcriteria as indicated)

### Evaluation ratings of whether the measure met the overall criterion (Steering Committee)

**Yes (Y)**- The overall criteria has been met

**No (N)**-The overall criterion has NOT been met

**High (H)** - There is high confidence (or certainty) that the criterion is met

**Moderate (M)** - There is moderate confidence (or certainty) that the criterion is met

**Low (L)** - There is low confidence (or certainty) that the criterion is met

### Recommendations for endorsement (Steering Committee)

**Yes (Y)** - The measure should be recommended for endorsement

**No (N)**-The measure should NOT be recommended for endorsement

**Abstain (A)**- Abstain from voting to recommend the measure

<b>TAP/Workgroup Reviewer Name:</b>
<b>Steering Committee Reviewer Name:</b>
<b>Staff Reviewer Name(s):</b> Turbyville
<b>NQF Review #:</b> 1599 <b>NQF Project:</b> Endorsing Resource Use Standards- Phase II

BRIEF MEASURE INFORMATION
<b>Measure Title:</b> Measure Name: ETG Based NON-CONDITION SPECIFIC resource use measure
<b>Measure Steward (IP Owner):</b> Ingenix, 950 Winter Street, suite 3800, Waltham, Massachusetts, 02451
<b>Brief description of measure:</b> The measure focuses on resources used to diagnose, manage and treat a population of patients (non-condition specific) during a defined 12-month period of time. The population included in the measurement can be described generally. Examples include a population of individuals enrolled with a health plan, individuals assigned to a patient-centered medical home or accountable care organization (ACO), or a panel of individuals managed by a primary care physician (PCP). A number of resource use measures are defined for this measure set, including overall cost of care, cost of care by type of service, and the utilization of specific types of services. Each resource use measure is expressed as a cost or a utilization count per member per month and comparisons with internal and external benchmarks are made using risk adjustment to support valid comparisons. Risk adjustment is based on the measure of risk assigned to each individual using the Episode Risk Group (ERG) methodology
<b>Resource use service categories:</b> Inpatient services: Inpatient facility services Inpatient services: Admissions/discharges Ambulatory services: Outpatient facility services Ambulatory services: Emergency Department Ambulatory services: Pharmacy Ambulatory services: Evaluation and management Ambulatory services: Procedures and surgeries Ambulatory services: Imaging and diagnostic Ambulatory services: Lab services
<b>Brief description of measure clinical logic:</b> The clinical underpinnings of this non-condition measure are based on the relative health risk for an individual. This health risk relates to the relative expectation around the individual's healthcare expenditures and use – a higher level of risk is expected to correlate with a greater use of healthcare and healthcare costs. Episode Risk Groups (ERGs) is the risk assessment methodology used to measure risk for the submitted measures. ERG is based on the observed episodes of care for the individual, as created by Episode Treatment Groups (ETG).  As described in the overview of ETG and ERG provided in the attachment to S2, ERG relies on ETG as the foundational element. A member's ETG episodes observed during the year provide the starting point for ERGs. ETG describes the unique clinical conditions for an individual and the services involved in their diagnosis, management and treatment. ETG also assigns a severity score and severity level to each condition episode – deriving from the condition status factors and co-morbidities observed for the condition. A member's ETGs and severity are then mapped to create an ERG array for the individual. The mappings of ETG and severity levels to the corresponding ERG are described in the worksheet "ERG-ETG List" within the attachment S5_Population_DataDictionary. Each element of the ERG array is assigned a weight that describes the incremental contribution of that ERG marker on health risk. Finally, an ERG risk score is translated to an ERG risk level, using discrete ranges of risk (e.g., a relative risk score between 0.0085 and 0.0695 is assigned to ERG risk category 1. ERG risk category ranges are described in the worksheet "ERG Risk Categories" within the attachment S5_Population_DataDictionary.  The attachments to S2 and S5 provide greater detail on ERG.
<i>If included in a composite or paired with another measure, please identify composite or paired measure:</i>
<b>Subject/ Topic Areas:</b>
<b>Type of resource use measure:</b> Per capita (population- or patient-based)
<b>Data Type:</b> Administrative claims Other

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
<p>A. Measure Steward Agreement.  <i>The measure is in the public domain or an intellectual property (<a href="#">measure steward agreement</a>) is signed. Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.</i></p> <p>A.1. Do you attest that the measure steward holds intellectual property rights to the measure? (If no, do not submit)</p> <p>Yes</p> <p>A.2. Please check if either of the following apply:</p> <p>Proprietary measure</p> <p>A.3. Measure Steward Agreement.</p> <p>Agreement signed and submitted</p> <p>A.4. Measure Steward Agreement attached:</p> <p>NQF Resource Use Addendum FINAL-634369193957845561.pdf</p>	<p>A</p> <p>Y <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>B. Maintenance.  <i>The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. (If no, do not submit)</i></p> <p>Yes, information provided in contact section</p>	<p>B</p> <p>Y <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>C. Purpose/ Use (All the purposes and/or uses for which the measure is specified and tested:</p> <p>Payment Program</p> <p>Public Reporting</p> <p>Quality Improvement (Internal to the specific organization)</p> <p>Quality Improvement with Benchmarking (external benchmarking to multiple organizations)</p>	<p>C</p> <p>Y <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>D. Testing.  <i>The measure is fully specified and tested for reliability <u>and</u> validity (<a href="#">See guidance on measure testing</a>).</i></p> <p>Yes, reliability and validity testing completed</p>	<p>D</p> <p>Y <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>E. Harmonization and Competing Measures.  <i>Have NQF-endorsed measures been reviewed to identify if there are related or competing measures? (List the NQF # and title in the section on related and competing measures)</i></p> <p>Yes</p> <p>E.1. Do you attest that measure harmonization issues with related measure (either the same measure focus or the same target population) have been considered and addresses as appropriate? (List the NQF # and title in the section on related and competing measures)</p> <p>Yes</p> <p>E.2. Do you attest that competing measures (both the same measure focus and the same target population)</p>	<p>E</p> <p>Y <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>

have been considered and addressed where appropriate? Yes	
<b>F. Submission Complete.</b> <i>The requested measure submission information is complete and responsive to the questions so that all the information needed to evaluate all criteria is provided.</i>	<b>F</b> Y <input type="checkbox"/> N <input type="checkbox"/>
Have all conditions for consideration been met? Yes Staff Notes to Steward (if submission returned):	Y <input type="checkbox"/> N <input type="checkbox"/>
Staff Notes to Reviewers (issues or questions regarding any criteria): Importance: No staff comments  <b>Scientific Acceptability (SA)-</b> <b>SA-Specifications:</b> Are the specifications clear enough for standardized implementation? <b>S6 Data Protocol:</b> Guidelines are provided, specifying types of data needed and steps to prepare data for specification. <b>S8 Clinical Framework:</b> Developer uses this section to describe the relative health risk for an individual—a critical part of the specification. Mappings of ETG and severity levels to the corresponding ERG are described in the worksheet “ERG-ETG List” within the attachment S5_Population_DataDictionary. Is there sufficient information to map all individual’s information to ETGs? <b>S9-Construction logic:</b> Trigger and end defined as 12-month period. Resource units identification approach provided. <b>S10-Risk Adjustment:</b> See clinical framework. <b>S10.3 Costing:</b> Specifies the use of actual payment or costs or a standard price (standard prices not provided) <b>S11.1-attribution:</b> Guidelines provided. <b>S11.4-outliers:</b> General guideline provided, not detailed. <b>SA-Testing: Steering Committee members will receive a more in-depth review of measure testing in a “Risk Adjustment, and Measure Reliability and Validity Assessment Worksheet” at a future date. High level comments provided below:</b> <b>SA1. Reliability:</b> Large database used to test reliability and validity of measure. Are the results provided in enough detail? <b>Validity:</b> Is testing approach and results provided in enough detail? <b>Risk Adjustment:</b> Is testing approach and results provided in enough detail?  Usability: No staff comments  Feasibility: No staff comments	
<b>File Attachments Related to Measure/Criteria:</b> Attachment: ETG_ERG_ConstructLogic FINAL.doc Attachment: S5_Population_DataDictionary.xls Attachment: S5_Population_DataDictionary-634369196771301067.xls Attachment: S6_DataProtocol-634369196961614785.xls Attachment: S7.2_Data Source Reference-634369198947096242.xls Attachment: S8_Population_ClinicalLogic.xls Attachment: Attachment: S9.7_RU_Categories-634369201486799996.xls Attachment: S10_Risk Adjustment Method Example Population.xls S12_sample_score_report_POP.pdf Attachment: SA_Reliability_VValidity Testing_POP.xls	

### IMPORTANCE TO MEASURE AND REPORT

Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in performance.	Eval Rating
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<p>Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All subcriteria must be met to pass this criterion.</p>	
<p><b>High Impact</b></p> <p><b>IM1. Demonstrated high impact aspect of healthcare:</b></p> <p>Affects large numbers</p> <p><b>IM1.1. Summary of evidence of high impact:</b></p> <p>There is general evidence and wide acceptance that opportunities exist to improve the efficiency of how health care is delivered, including the resources used in diagnosing, managing and treating patients. Significant variation exists in resource use across and within geographic areas and across providers and delivery systems, indicating opportunities for improvement. New approaches focused on organizing the delivery and reimbursement of healthcare all require sound methods and measures to support the assessment of value, including the cost of care provided.</p> <p><b>IM1.2. Citations for evidence of high impact cited in IM1.1.:</b></p> <p>no references for Non-condition specific</p>	<p><b>1a</b></p> <p>H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/></p>
<p><b>IM2. Opportunity for Improvement</b></p> <p><b>IM2.1. Briefly explain the benefits envisioned by use of this measure:</b></p> <p>Benefits envisioned by this set of measures relates to identifying opportunities and measuring value. In particular, the measure and its components can support:</p> <ul style="list-style-type: none"> <li>--The understanding of opportunities to improve the efficiency of healthcare, in particular for patients with selected conditions. Reducing unwarranted variation will provide an opportunity to decrease resources expended without a significant impact on quality of care and outcomes. In some cases, outcomes may improve due to the decrease in the provision of unnecessary services and</li> <li>-- Measurement of the value delivered by individual providers, provider groups, and delivery systems – in particular the resources expended in care delivery. A number of current initiatives require a valid and robust approach to resource measurement, including medical homes, value-based payment and accountable care organizations (ACOs). The ERG methodology described in this submission provides a solid foundation to support such measurements. The resource cost and use measures included in this submission provide actionable insights into relative performance and opportunities for improvement.</li> </ul> <p><b>IM2.2. Summary of data demonstrating variation across providers or entities:</b></p> <p>Episode results were not readily available for non-condition patients to support a specific analysis for that population. However, results for Diabetes, CAD and CHF can provide some insights. Data to explore this question were extracted from the Ingenix National health care services benchmark database. This database describes enrollment, medical and pharmacy services, and providers for a population of more than 25 million covered lives. The data used for this analysis was primarily for commercial non-elderly individuals and covered the years 2009 thru 2010. In particular, data for 9 health care organizations including 7 million members were selected. The information was processed to produce Diabetes, CAD or CHF episodes. Incomplete and low cost outlier episodes were excluded. High cost outlier episodes were truncated at the high outlier threshold level. Episodes were attributed to providers in relevant specialties (peer groups).</p> <p>The observed and expected costs for Diabetes, CAD and CHF episodes, separately, were computed, with expected costs based on averages for a provider's peers, adjusted to reflect the provider's mix of Diabetes, CAD and CHF episodes by severity level. In particular, the following steps were performed:</p> <ul style="list-style-type: none"> <li>-- Computed the observed experience for the provider being measured, across all episodes to be included in the comparison;</li> <li>-- Computed the experience for the provider's peers. Compute this experience at the level of the risk adjustment, in this case ETG base condition and severity level. For a peer benchmark, average cost per episode across all peers for the ETG base condition and episode level can be computed.;</li> </ul>	<p><b>1b</b></p> <p>H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/></p>

-- Compared the observed experience to the expected result. This expected result is based on the peers average level of performance, adjusted to reflect the provider's own case mix of episodes by condition and level of severity. The ratio of observed to expected results can be termed the relative cost ratio (O/E ratio) and is a risk adjusted measure. A ratio above 1.00 indicates greater resource use than peers, less than 1.00 lower resource use.

Variation in the O/E ratio across providers was assessed. In this way comparisons or relative resource use can be made, removing differences in the underlying mix of episodes included. Providers with greater than 20 CAD or 20 CHF episodes were selected. For CAD, 1,726 providers and 77,596 episodes were included covering the specialties of internal medicine, family practice and cardiology. For CHF, 107 providers and 3,000 episodes were included covering the specialties of internal medicine, family practice and cardiology. For Diabetes 3,306 providers and 136,498 episodes were included covering the specialties of internal medicine, family practice and endocrinology. The providers in each specialty were compared with their peers only (same specialty and same enrolled population for the healthcare organization). However, OE results were aggregated across healthcare organizations and specialties to summarize variation.

The observed variation in cost of care performance can be summarized using the inter-quartile range for the O/E ratio (the difference between the 25th and 75th percentile physician OE ratios). The results showed variation in performance across these measure physicians. In particular, the inter-quartile range for the O/E ratio for the following key measures was approximately: (e.g., 0.60 can be interpreted as 40 percent below peers, 1.40 as 40 percent above peers)

#### For CAD

- Total Cost per Episode – 0.71 to 1.22
- Specialty Care Cost per Episode – 0.61 to 1.06
- Pharmacy Prescriptions per Episode – 0.76 to 1.20

#### For CHF

- Total Cost per Episode – 0.60 to 1.36
- Hospital Admissions per Episode – 0.52 to 1.38
- Specialty Care Cost per Episode – 0.52 to 1.38
- Pharmacy Prescriptions per Episode – 0.74 to 1.22

#### For Diabetes

- Total Cost per Episode – 0.84 to 1.13
- Specialty Care Cost per Episode – 0.60 to 1.20
- Pharmacy Prescriptions per Episode – 0.81 to 1.18

As shown, the variation observed across providers is significant.

### IM2.3. Citations for data on variation:

Variations in per capita spending - Inpatient-based and specialist-oriented pattern of practice

Regional differences in Medicare spending are largely explained by the more inpatient-based and specialist-oriented pattern of practice observed in high-spending regions. Neither quality of care nor access to care appear to be better for Medicare enrollees in higher-spending regions.

Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care. *Ann Intern Med* . 2003 138(4): 273-287. The Dartmouth Atlas shows a more than two-fold variation in per capita Medicare spending in different regions of the country. Adjusting for price differences leads to only a modest decline in overall variations. It is utilization -- the amount of care delivered to patients -- that explains most of the regional variation in Medicare spending. Most spending variation was due to differences in use of the hospital as a site of care (versus, say, hospice, nursing home, or the doctor's office) and to discretionary specialist visits and tests.

Reflections on variations, The Dartmouth Atlas Of Health Care. Available at:

<http://www.dartmouthatlas.org/keyissues/issue.aspx?con=1338>. Accessed on February 12, 2011.

Variations in clinical decision making – ambulatory care-sensitive conditions

Clinicians have identified a group of diagnoses referred to as “ambulatory care-sensitive” conditions – such as poorly controlled diabetes or worsening heart failure – which can be treated in either the inpatient or the outpatient setting, and

for which hospitalization can often be prevented by better outpatient management. The variations among regions in admission rates of patients with these conditions can be ascribed to differences in clinical decision-making, rather than to differences in underlying illness rates. Hospitalization rates for these – and for most medical conditions – are also highly correlated with the local supply of hospital beds.

Hospital Discharges for Ambulatory Care-Sensitive Conditions Per 1,000 Medicare Enrollees, By Gender And Type Of Admission, The Dartmouth Atlas Of Health Care (2005) Available at:

<http://www.dartmouthatlas.org/data/topic/topic.aspx?cat=20> Accessed on February 12, 2011.

Variations in the use of diagnostic tests and discretionary services

Variations in ECG ordering are not explained by patient characteristics. The tremendous nonclinical variations in ECG test ordering suggest a need for greater consensus about use of screening ECGs in primary care.

Randall SS, Bismruta M. Variation in routine electrocardiogram use in academic primary care practice. Arch Intern Med. 2001;161:2351-2355

Physicians in high-spending regions see patients back more frequently and are more likely to recommend screening tests of unproven benefit and discretionary interventions compared with physicians in low-spending regions; however, both appear equally likely to recommend guideline-supported interventions.

Physicians in higher-spending regions were much more likely than those in lower-spending regions to recommend discretionary services, such as referral to a subspecialist for typical gastroesophageal reflux or stable angina or, in another vignette, hospital admission for an 85-year-old patient with an exacerbation of end-stage congestive heart failure. And they were three times as likely to admit the latter patient directly to an intensive care unit and 30% less likely to discuss palliative care with the patient and family. Differences in the propensity to intervene in such gray areas of decision making were highly correlated with regional differences in per capita spending.

Sirovich B, Gallagher PM, Wennberg DE, Fisher ES. Discretionary decision making by primary care physicians and the cost of U.S. health care. Health Aff (Millwood). 2008; 27:813-823

Widely varying levels of health care spending across the United States are strongly correlated with the tendency of local physicians to recommend discretionary interventions. Physicians in regions of differing spending appear to differ only in their discretionary decision making. For decisions that are informed by evidence or practice guidelines (such as screening mammography and standard exercise tolerance testing), physicians were equally likely to recommend interventions regardless of local spending levels

Sirovich B, Gallagher PM, Wennberg DE, Fisher ES. Discretionary Decision Making By Primary Care Physicians And The Cost Of U.S. Health Care. Health Aff (Millwood). 2008; 27(3): 813–823.

Supply sensitive care

Supply-sensitive care accounts for more than half of all Medicare spending. In regions where there are more hospital beds per capita, patients will be more likely to be admitted to the hospital. In regions where there are more intensive care unit beds, more patients will be cared for in the ICU. More specialists will result in more visits to specialists. And the more CT scanners are available, the more CT scans patients will receive. The Dartmouth Atlas has consistently demonstrated these relationships.

Patients do not experience improved survival or better quality of life if they live in regions with more care. In fact, the care they receive appears to be worse. They report being less satisfied with their care than patients in regions that spend less, and having more trouble getting in to see their physicians.

Supply sensitive care, The Dartmouth Atlas Of Health Care (2005) Available at:

<http://www.dartmouthatlas.org/keyissues/issue.aspx?con=2937> Accessed on February 14, 2011.

Numerous studies have found that higher bed supply is associated with more hospital use for conditions where outpatient care is a viable alternative. This includes most medical causes of hospitalization. In 2006, bed supply remained an important determinant of medical discharges.

The implications of regional variations in Medicare spending. Part 1: the content, quality, and accessibility of care. Annals of Internal Medicine. Feb 18 2003;138(4):273-287.

Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variations in Medicare spending. Part 2: health outcomes and satisfaction with care. Annals of Internal Medicine. Feb 18 2003;138(4):288-298.

By far, the most significant factor associated with how much Medicare spends in any given region is the availability of medical resources. Studies from the Dartmouth Atlas Project have shown that the frequency with which physicians admit patients with chronic diseases to the hospital is highly correlated with the number of beds per capita in the region. The frequency of visits to medical specialists is correlated with the

number of specialists available. And the frequency with which chronically ill patients undergo many diagnostic tests and procedures also varies. We call such procedures and tests, along with the rates of hospitalization and physician visits, “supply-sensitive” care, or care that varies with the local availability of such medical resources as physicians, hospital beds, intensive care unit (ICU) beds, and diagnostic imaging equipment. The volume of supply-sensitive care that is delivered to the chronically ill is a powerful force driving Medicare spending. The utilization of supply-sensitive services for treating the chronically ill varies dramatically across different regions of the country, and it is responsible for much of Medicare spending. Local capacity, or the local supply of medical resources per capita, varies widely, and this local capacity bears directly on how much care is used to treat the chronically ill.

Wennberg JE, Fisher ES, Goodman DC, Skinner JS. “Tracking the care of patients with severe chronic illness.” The Dartmouth Atlas of Health Care 2008. Available at: [http://www.dartmouthatlas.org/downloads/atlas/2008\\_Chronic\\_Care\\_Atlas.pdf](http://www.dartmouthatlas.org/downloads/atlas/2008_Chronic_Care_Atlas.pdf) Accessed on February 14, 2011.

#### IM2.4. Summary of data on disparities by population group:

Health disparities are defined as differences in the occurrence, frequency, death and burden of diseases and other unfavorable health conditions that exist among specific population groups<sup>1</sup>. Examining health care differences or gaps experienced by one population compared to another is an integral part of understanding and improving health care quality<sup>2</sup>. The quality of healthcare delivered within the United States also differs from population to population due to differences in access to care, healthcare utilization and other factors<sup>2</sup>.

Measures of healthcare utilization allow for a broader understanding of access to care<sup>2</sup>. Barriers to care that are associated with differences in healthcare utilization may have a more significant impact on healthcare quality than other factors<sup>2</sup>. Several studies on disparities have relied upon measures of healthcare utilization and the data demonstrates some of the most significant differences in care among diverse groups<sup>2</sup>. Current efforts to improve healthcare delivery continue to rely upon measures of health care utilization to fully understand the complexities surrounding disparate health care outcomes. For example, greater utilization of services does not necessarily indicate better care. In fact, high use of some inpatient services may reflect compromised access to outpatient health services<sup>2</sup>.

In 2006, the Nation’s 14 million health service workers provided approximately 960 million office visits, 673 million hospital outpatient visits, treated 37 million hospitalized patients and 1.4 million nursing home residents<sup>2</sup>. Approximately 70% of the non-institutionalized civilian population visited a provider’s medical office or outpatient facility and about 60% received a prescription medication<sup>2</sup>. National health expenditures totaled over \$2 trillion dollars in fiscal year 2006 with 5% of the population accounting for 55% of total costs<sup>2</sup>. Additionally, almost one-third of all healthcare expenditures are estimated to be the result of low-quality care, including overuse, misuse and waste<sup>2</sup>. Utilization resource measures provide a mechanism to better understand healthcare delivery patterns in order to improve the health of all population groups.

The cost and use measures included in this submission will provide an approach to assessing disparities. For example, episode-based measures of cost and use can be employed to create severity-adjusted comparisons of the resources expended in treating cardiovascular conditions, including supporting a focus on the condition-related resources.

#### IM2.5. Citations for data on disparities cited in IM2.4:

1. Health Disparities in the United States: Facts and Figures, American Society of Clinical Oncology, 2009
2. National Healthcare Disparities Report, U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality, 2008

#### IM3. Measure Intent

##### IM3.1. Describe intent of the measure and its components/ Rationale (including any citations) for analyzing variation in resource use in this way

As noted in IM2.1, the intent of the measure and its components is to support:

- The understanding of opportunities to improve the efficiency of healthcare, in particular for patients with selected conditions. Reducing unwarranted variation will provide an opportunity to decrease resources expended without a significant impact on quality of care and outcomes. In some cases, outcomes may improve due to the decrease in the provision of unnecessary services and
- Measurement of the value delivered by individual providers, provider groups, and delivery systems – in particular the

1c

H ☐  
M ☐  
L ☐  
I ☐

resources expended in care delivery. A number of current initiatives require a valid and robust approach to resource measurement, including medical homes, value-based payment and accountable care organizations (ACOs). The ETG episode methodology described in this submission provides a solid foundation to support such measurements. The resource cost and use measures included in this submission provide actionable insights into relative performance and opportunities for improvement.	
IM4. Resource use service categories are consistent with measure construct  <i>Refer to IM3.1. &amp; all S9 items to evaluate this criteria.</i>	1d  H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/>
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Importance to Measure and Report</i> ?	
Steering Committee: Was the threshold criterion, <i>Importance to Measure and Report</i> , met? Rationale:	Y <input type="checkbox"/> N <input type="checkbox"/>

## SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented.

## MEASURE SPECIFICATIONS

<p>S1. Measure Web Page: <i>Do you have a web page where current detailed measure specifications can be obtained?</i></p> <p>No</p> <p>S2. General Approach <i>If applicable, summarize the general approach or methodology to the measure specification. This is most relevant to measures that are part of or rely on the execution of a measure system or applies to multiple measures.</i></p> <p>All of our submitted measures for Non-Condition Specific Population analysis rely on a foundation of per member per month or per 1,000 per year metrics, risk adjusted using the Episode Risk Group (ERG) methodology. ERG uses an individual's episodes of care, defined using Episode Treatment Groups (ETGs), to assess their relative risk for healthcare cost and use. The approach involves: (1) identifying individuals to be included in the resource use measurement; (2) collecting and assembling data on the health care services (service history) consumed by these individuals over a defined 12-month period; (3) using the diagnostic and procedural information from this service history to categorize each individual's mix of diseases and clinical conditions and using this mix and the ERG methodology to assess relative health risk; (4) using the 12-month service history to summarize each individual's medical and pharmacy cost and utilization, overall and by type of service; and (5) creating risk adjusted measures of cost and use, risk-adjusted using each individual's ERG results. The attached General Methods documents, ETG General Methods Construct Logic and ERG General Methods Construct Logic, provide a high level explanation of the ETG and ERG concepts. The remainder of this submission provides details on the further steps involved in creating the submitted measures.</p> <p>Attachment: ETG_ERG_ConstructLogic FINAL.doc</p>	Eval Rating 2a1/2b1
<p>S3. Type of resource use measure:</p> <p>Per capita (population- or patient-based)</p>	

<p><b>S4. Target Population:</b></p> <p>Adult/Elderly Care Children's Health Maternal Care Populations at Risk Special Healthcare Needs</p>	
<p><b>S4.1. Subject/Topic Areas:</b></p>	
<p><b>S4.2. Cross Cutting Areas (HHS or NPP National health goal/priority)</b></p> <p>Care Coordination Overuse Population Health</p>	
<p><b>S5. Data dictionary or code table</b> Please provide a web page URL or attachment if exceeds 2 pages. NQF strongly prefers URLs. Attach documents only if they are not available on a web page and keep attached file to 5MB or less.</p> <p><i>Data Dictionary:</i></p> <p>URL: Please supply the username and password: Attachment: S5_Population_DataDictionary.xls</p> <p><i>Code Table:</i></p> <p>URL: Please supply the username and password: Attachment: S5_Population_DataDictionary-634369196771301067.xls</p>	
<p><b>S6.Data Protocol (Resource Use Measure Module 1)</b> The measure developer must determine which of the following data protocol steps: data preparation, data inclusion criteria, data exclusion criteria, and missing data, are submitted as measure specifications or as guidelines. Specifications limit user options and flexibility and must be strictly adhered to; whereas guidelines are well thought out guidance to users while allowing for user flexibility. If the measure developer determines that the requested specification approach is better suited as guidelines, please select and submit guidelines, otherwise specifications <u>must</u> be provided.</p>	
<p><b>Data Protocol Supplemental Attachment or URL:</b> If needed, attach document that <u>supplements</u> information provided for data protocol for analysis, data inclusion criteria, data exclusion criteria, and missing data (Save file as: S6_Data Protocol). All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.</p> <p>URL: Please supply the username and password: Attachment: S6_DataProtocol-634369196961614785.xls</p>	
<p><b>S6.1. Data preparation for analysis</b> Detail (specify) the data preparation steps and provide rationale for this methodology.</p> <p>Guidelines : Administrative medical and pharmacy claims, member enrollment and demographic information and provider characteristics describe the primary data sources used in creating ETG episodes of care and measures of resource use per episode. The key data elements required to support ETG processing and the creation of resource use</p>	

per episode measures are detailed in attachment S6\_DataProtocol.

General recommendations for preparing data for ETG processing and the creation of resource use sub-measures are as follows:

- The data for all required elements should be complete, valid and consistently populated. In particular:
- Only final claims should be included in processing. Adjustments and pended/non-fully adjudicated claims should be removed;
- All recorded diagnosis, procedure and NDC codes should be included and conform to standard ICD-9, HCPCS, CPT, NUBC revenue code and NDC coding conventions. Any non-standard, or "local" codes should be cross-walked to a valid code;
- An assessment of the relative validity of diagnosis and procedural coding should be made. If significant differences in the prevalence or validity of diagnosis and procedural coding are observed across populations, data sources or administrative claims systems, these discrepancies should be validated and addressed, if relevant. If systematic discrepancies and data issues are the result of incomplete data, the members impacted by the incomplete information should be excluded from processing and measurement. An example is a defined population with significant evidence of missing or invalid coding or a population where primary care capitation is in place and claims or encounters for those services are not available;
- Financial fields should be complete and valid, reflecting the actual payment or costs associated with the service or a standard-priced resource cost amount. As a guideline, the financial amount used in resource measurement should reflect all payments for a service, including those made to the provider by payer, patient and other entities. The allowed or equivalent payment is an example;
- An assessment of the relative validity of the financial information should be made. Systematic gaps in financial data should be validated and if resulting from incomplete data, the members impacted by the incomplete information should be excluded from processing. An example is a defined population with significant evidence of missing or invalid financial data where options are not available to estimate the financial amounts;
- Inpatient facility claims should accurately represent the admission and discharge dates for the inpatient stay. Interim facility bills where the patient has not been discharged should reflect the time period of the services rendered and captured on the interim bill.
- The member IDs used to identify a member should be unique – describing an individual member. The member ID field across claims and membership should follow the same format. Duplicate IDs for a member are not recommended;
- Each member enrollment record should describe a unique enrollment span, that is, the input data includes one row per member for each continuously enrolled period where the member has consistent attributes. A member may have multiple enrollment records reflecting a gap in enrollment or a change to their member attributes (i.e. PCP or Pharmacy Benefit) over time.
- It is recommended that member enrollment span overlaps are reconciled prior to processing;
- A member's pharmacy benefit status should be noted and reflects whether or not the member has pharmacy data generally available for use in measurement. Examples of populations where pharmacy data may not be available include the individual not have pharmacy coverage for the defined enrollment period or pharmacy services managed by a pharmacy benefits manager (PBM) and the PBM data has not been integrated with the medical claims;
- The provider IDs used to identify a provider should be unique – describing an individual physician or other provider. The provider ID field across claims and membership (Assigned PCP) should follow the same format. Duplicate IDs for a provider are not recommended;
- Each provider ID should be assigned a specialty that reflects the primary specialty of the provider. This information is used to support valid episode grouping and also to assign providers to an appropriate peer group to support episode analysis;

-- A place of service crosswalk table that maps each native place of service code to a standard format is required. Ingenix valid values include:

- 11 – Office
- 12 – Home
- 21 – Inpatient Hospital
- 22 – Outpatient Hospital
- 23 – Emergency Room, Hospital
- 24 – Ambulatory Surgical Center
- 31 – Skilled Nursing Facility
- 39 – Nursing Home, Custodial, Hospice
- 49 – Ambulance
- 51 – Inpatient Psychiatric Facility
- 59 – Psychiatric Facility
- 61 – Comprehensive Inpatient Facility
- 69 – Rehab Facility
- 81 – Independent Lab
- 99 – Unknown or Other (this POS value should represent a small portion of the data for optimal results)

-- Provider Specialty on claims should accurately reflect the service category of the claim and support assignment of ETG Type of Provider for each claim. Type of Provider values used to support ETG processing include:

- 0 – Clinician
- 1 – Facility
- 2 – Other

- Place of Service, Provider Specialty, CPT/HCPC Procedure Codes and Revenue codes should be accurate and support assignment of ETG Type of Service for each claim. Type of Service values used to support ETG processing include:

- 0 – Ancillary
- 1 – Medical/Surgical
- 2 – Room and Board

#### S6.2.Data inclusion criteria

*Detail initial data inclusion criteria and rationale(related to claim-line or other data quality, data validation, e.g. truncation or removal of low or high dollar claim)*

Specifications : For the application of ETG episode logic and the measurement of ERG risk, these methodologies accept all claims for initial processing provided the input format is correct and required fields are provided (refer to section S6.1 for data preparation details and considerations). The ETG and ERG methodologies do not truncate or eliminate service records based on any cost or other criteria. The identification of financial cost outliers and invalid information at the service level is performed by the organization preparing the input data. As noted in S6.1, financial amounts on individual service records should be validated prior to their use in measurement.

In terms of resource use measure construction following ETG and ERG grouping, no additional data inclusion or exclusion are applied.

#### S6.3. Data exclusion criteria

*Detail initial data exclusion criteria and rationale (related to claim-line or other data quality, data validation, e.g. truncation or removal of low or high dollar claim)*

Specifications : For the application of ETG episode logic and the measurement of ERG risk, these methodologies accept all claims for initial processing provided the input format is correct and required fields are provided (refer to section S6.1 for data preparation details and considerations). The ETG and ERG methodologies do not truncate or eliminate service records based on any cost or other criteria. The identification of financial cost outliers and invalid information at the service level is performed by the organization preparing the input data. As noted in S6.1, financial amounts on individual service records should be validated prior to their use in measurement.

#### S6.4. Missing Data

*Detail steps associated with missing data and rationale(e.g., any statistical techniques used)*

Specifications : The non-condition, population-based resource use measure described in this submission uses measures of ERG risk to support risk adjustment of resource use comparisons. As described in the overview of the ERG

methodology (section S2), the ETG methodology plays an important role in estimating ERG risk. ETG does include a methodology for working with incomplete and missing information. Two other issues related to missing or incomplete data that are considered by ETG and the ERG-adjusted resource measures submitted: (i) approaches that leverage available clinical information where other information is missing and (ii) adjusting for missing pharmacy data in creating comparable measures.

In terms of working with missing information during the episode grouping process, ETG uses the following approaches:

-- Missing Diagnosis Codes: If all four diagnosis codes are missing from a non-pharmaceutical claim the ETG application will use the procedure code to group, except when the procedure code requires a valid diagnosis code to be present. This requirement is per the ETG eligibility table. In cases where all diagnosis codes are missing and the procedure requires a valid diagnosis code to also be present, the service record will not group and will be assigned to an error ETG. As described in the general description of the ERG methodology in the attachment to S2, since ERG builds from an individual's mix of ETG episodes, if a service record cannot contribute to ETG grouping due to missing data, it also cannot contribute to ERG risk measurement.

-- Missing Procedure Codes: If there is no procedure code on a service record then the record will group based on the diagnosis codes or NDC drug code. If there is no diagnosis, procedure or pharmacy code on the claim, then the claim will not group and will have an error code assigned to it.

The services not assigned to an episode following these steps and noted as errors based on missing data would not be included in a specific clinical episode or therefore will not be available for use in triggering clinical risk markers in ERGs.

-- Missing Pharmacy Data: For some members and populations, pharmacy data can be missing generally, due to the different factors, including not having a pharmacy benefit with the entity collecting the data used in measurement or pharmacy services being managed by a pharmacy benefits manager (PBM) for the measurement entity. Where pharmacy data are not generally available for a member, adjustments are required to ensure valid comparisons.

The ETG grouping and ERGs do not require pharmacy data. ETG treats pharmacy services as ancillary records - these records cannot start an episode for a clinical condition. However, missing pharmacy records will impact the observed cost and use for a member – which will be underestimated, on average, where pharmacy data are missing. It is recommended that pharmacy benefit/data status be used as a separate category in risk adjusting pharmacy and total costs per member per month. For example, the expected or “peer” results for a physician should reflect their mix of members with and without pharmacy benefits/data.

Finally, the population-based measure described here employ a 12 month measurement period. For some measures, enrollment and claims data may not be available for this full time period, either due to the member enrolling or disenrolling sometime during the 12 months. The submitted measure continues to include members with partial enrollment during the 12 month period, adjusting for their tenure in member months using a per member per month (PMPM) or per 1,000 members per year calculation.

**S7. Data Type:** Administrative claims  
Other

#### S7.1. Data Source or Collection Instrument

*Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc.)*

Both medical and pharmacy administrative service records (claims or encounters) are used to support the measures. Member enrollment span, pharmacy benefit status and age and gender are also required. Provider characteristics, including specialty and unique provider identifier also have importance to support attribution and definition of peers.

#### S7.2. Data Source or Collection Instrument Reference

*(Please provide a web page URL or attachment). NQF strongly prefers URLs. Attach documents only if they are not available on a web page and keep attached file to 5MB or less)*

URL:

Please supply the username and password:

Eval  
Rating  
2a1

H ☐  
M ☐  
L ☐  
I ☐

Eval  
Rating  
2b1

H ☐  
M ☐  
L ☐  
I ☐

Attachment: S7.2\_Data Source Reference-634369198947096242.xls

**S8.Measure Clinical Logic (Resource Use Measure Module 2)**

*The measure's clinical logic includes the steps that identify the condition or event of interest and any clustering of diagnoses or procedures. For example, the diagnoses and procedures that qualifies for a cardiac heart failure episode, including any disease interaction, comorbid conditions, or hierarchical structure to the clinical logic of the model. (Some of the steps listed separately below may be embedded in the risk adjustment description, if so, please indicate NA and in the rationale space list 'see risk adjustment details.')*

**Clinical Logic Supplemental Attachment or URL:**

*If needed, provide a URL or document that supplements information provided for the clinical framework, co-morbid interactions, clinical hierarchies, clinical severity levels, and concurrency of clinical events*

URL:

Please supply the username and password:

Attachment: S8\_Population\_ClinicalLogic.xls

**S8.1. Brief Description of Clinical Framework**

*Briefly describe your clinical logic approach including clinical topic area, whether or not you account for comorbid and interactions, clinical hierarchies, clinical severity levels and concurrency of clinical events.*

The clinical underpinnings of this non-condition measure are based on the relative health risk for an individual. This health risk relates to the relative expectation around the individual's healthcare expenditures and use – a higher level of risk is expected to correlate with a greater use of healthcare and healthcare costs. Episode Risk Groups (ERGs) is the risk assessment methodology used to measure risk for the submitted measures. ERG is based on the observed episodes of care for the individual, as created by Episode Treatment Groups (ETG).

As described in the overview of ETG and ERG provided in the attachment to S2, ERG relies on ETG as the foundational element. A member's ETG episodes observed during the year provide the starting point for ERGs. ETG describes the unique clinical conditions for an individual and the services involved in their diagnosis, management and treatment. ETG also assigns a severity score and severity level to each condition episode – deriving from the condition status factors and co-morbidities observed for the condition. A member's ETGs and severity are then mapped to create an ERG array for the individual. The mappings of ETG and severity levels to the corresponding ERG are described in the worksheet "ERG-ETG List" within the attachment S5\_Population\_DataDictionary. Each element of the ERG array is assigned a weight that describes the incremental contribution of that ERG marker on health risk. Finally, an ERG risk score is translated to an ERG risk level, using discrete ranges of risk (e.g., a relative risk score between 0.0085 and 0.0695 is assigned to ERG risk category 1. ERG risk category ranges are described in the worksheet "ERG Risk Categories" within the attachment S5\_Population\_DataDictionary.

The attachments to S2 and S5 provide greater detail on ERG.

**S8.2. Clinical framework**

*Detail any clustering and the assignment of codes, including the grouping methodology, the assignment algorithm, and relevant codes and rationale for these methodologies.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG).

ERGs describe the relative health risk for a member in terms of current or future health care expenditures. ERG uses the episodes of care created by ETG as building blocks, including what condition episodes are observed and their severity. The nature and mix of episodes provide a clinical profile for a member that can serve as a marker of their current and future need for medical care.

A high-level overview of the ERG logic is as follows:

1. Translate ETGs into ERGs

2. Generate ETG Profile (a member's demographic characteristics and observed mix of ETGs)
3. Calculate ETG Risk Score

#### Step 1: Translate ETGs into ETGs

The results from an ETG grouping of 12 months of medical and pharmacy services provide the inputs for ETGs. In particular, service records that have been grouped into ETGs for a single year are used as the condition identifiers for the member. The ETG base class and the Severity Level assigned to each claim record are elements used to associate an ETG to an ETG. Base ETG and Severity Level play an important role in assigning ETGs to an individual. As a rule, ETGs are not differentiated using a treatment indicator. However, the active management status of malignant neoplasm ETGs (triggered by the presence of radiation therapy or chemotherapy) is the exception. ETG assignment is not dependent on episode completion status or outlier status. ETG assignment does not vary with the number of episodes or ETGs observed for a member within the same ETG. Members with single or multiple episodes within an ETG receive identical assignments.

The attachment "S5\_Population\_DataDictionary" and tab "ETG-ETG List" includes the entire mapping and hierarchies used to translate ETGs into ETGs.

The table entries for Diabetes provide an example of how the ETG values are translated into an ETG. The Base ETGs for the Diabetes ETGs (163000 for Diabetes and 901300 for Diabetes Rx Agents, e.g., insulin) describe the observed condition. The Severity Level denotes the level of episode severity, with greater severity indicating a higher level of expected resources required. The different combinations of ETG and severity level trigger an ETG marker. Note that hierarchies are applied to ensure that only one ETG marker from a related clinical family is triggered. The hierarchy below is 0202 (for Diabetes), with a Priority value for each Base ETG and Severity Level. The lower value indicates a higher ranked Priority. Only the Base ETG and Severity Level combination with the lowest value for Priority is retained if more than one combination in the Hierarchy is observed.

In summary, an individual's ETG episodes and their severity determine their ETGs. Hierarchies are employed to ensure only the most significant episode in the hierarchy is used to trigger an ETG. With the exception of malignant neoplasm ETGs, medical treatments observed within the episode are not used in determining an individual's ETGs.

#### Step 2: Generate ETG Profile

A member's age, gender and mix of ETGs are used to create their ETG profile. Every member is assigned to an age-sex group, using ten age groups: 0-5, 6-11, 12-18, 19-34, 35-44, 45-54, 55-64, 65-74, 75-84 and greater than 84. Members without claims will have no episodes and no ETGs. For these members, risk is based solely on age and gender. Members with claims are assigned to one or more ETGs depending on their mix of episodes of care.

#### ETG Timing

The ETG models were developed using up to 12 months of data to measure relative health risk for the same 12 month prediction period (retrospective risk) or a future 12 month prediction period (prospective risk).

ETG uses ETG assignments for medical and pharmacy services in the latest 12 month period of the ETG grouping. This 12 month period is called the experience period—the period of time during which markers of member health risk are collected and used to measure retrospective and prospective risk. If more than 12 months of claims are grouped, ETG only uses the most recent 12 months of data.

#### Step 3: Calculate ETG Risk

Calculating risk involves the assignment of a weight to each ETG and demographic marker of risk. These weights describe the contribution to risk of being in a specific age-sex group or having a particular medical condition included in an ETG. The model of risk can be defined generally as:

$$\text{RiskPi} = ?a_s * \text{AGESEXi,s} + ?b_e * \text{ETGi,e}$$

$$\text{RiskRi} = ?c_e * \text{ETGi,e}$$

where RiskPi and RiskRi are the ETG prospective and retrospective risk scores for person i; AGESEXi,s and ETGi,e indicate their age-sex group (s); and ETG assignments (e), and the a's, b's and c's are the risk weights. The age-sex and ETG markers are set to 1 if the marker is observed for an individual, 0 if not. Each member has their own profile of age-sex and ETGs. However, for each ETG model, the risk weights are pre-defined and are the same for all individuals. A person's risk score is the sum of these risk weights for each marker observed.

The ERG development data were obtained from the Ingenix Impact National Database, which includes information from over 40 health plans in nine different geographic census regions. The risk weights for Episode Risk Groups (and the pure age-gender model) were created using multiple linear regression and recent enrollment and medical and pharmacy claims data. The risk weights represent the relative costs per member per month (PMPM) associated with being in a specific age-gender group or having a particular medical condition included in an ERG.

#### Input Data/Model Outcome

The weights associated with the ERG risk markers vary depending on both the availability of data for use as input and the services to be included in predicted risk. A population which has been grouped with pharmacy data included will likely produce a somewhat different portrait of risk than the same population without pharmacy data. To obtain the most precise measures of risk, ERG offers 2 model options (medical or medical and pharmacy) depending on whether pharmacy claims are available for a given member. The ERG risk markers included in these model options are identical, however the ERG risk weights differ according to which model option is selected.

In most applications of ERG, the risk associated with the cost of all health care services, including both medical and pharmacy services are desired. However, in some applications predicting risk for only medical services may be important. To support this flexibility, ERG also offers options related to the risk outcome: medical and pharmacy services, or medical services only.

#### Expenditure Thresholds

Expenditure threshold describes the level at which a higher-cost member's annual expenditures might be truncated for an application (truncation refers to capping a member's annual costs at some level prior to analysis). ERG offers three options for annual member threshold levels: \$25,000, \$100,000, and \$250,000. As with the other model options described above, the ERG risk markers included in threshold options are identical, however the ERG risk weights differ. In particular, the risk weights for the three options were derived using different threshold assumptions for the members included in the database used for developing the models. The selection of the expenditure threshold to use in the assessment of relative resource use depends on the application. As a default, most applications of resource use measurement for the submitted measures employ the \$100,000 threshold model.

#### Length of Enrollment

A member's length of enrollment may affect the number and mix of episodes of care observed. This will ultimately affect the ERG risk markers assigned and risk scores generated by the ERG models. Partial enrollment reflects the number of days a member was enrolled during the experience period and a risk weight assignment for the ERG array is based on that length of time. All ERG models utilize partial enrollment to determine the weights used in computing risk.

With this approach, ERG will apply 1 of 4 separate sets of risk weights that correspond with the member's length of enrollment during the 12-month experience period. The enrollment periods are categorized on worksheet "ERG Enrollment Periods" within the S8\_Population\_ClinicalLogic attachment.

Risk will also be impacted by whether the member is an elderly or non-elderly individual, due to the different implications of a disease or co-morbidity on the overall level of risk for these members. Empirical testing during ERG development supported this premise. As a result, separate sets of ERG weights are used for individuals under 65 than for those aged 65 or greater. Although different weights are used, the same set of risk markers are employed for elderly and non-elderly individuals.

The input data, model outcome, and expenditure threshold data elements are supplied in the member demographics data as input into ERG. The length of enrollment is determined during ERG processing, using the supplied member eligibility dates.

#### ERG Risk Models and Features

ERG provides significant flexibility for supporting a variety of business applications. The attachment for S2 provides details on the different models. As a guideline, the Retrospective ERG risk model, \$100,000 threshold, is used to support the risk adjustment for the submitted measures. The "Medical/Medical-RX" model weightings are applied for individuals without a pharmacy benefit or without general pharmacy data availability. The "Medical-RX/Medical-RX" model weightings are applied for individuals with a pharmacy benefit/with general pharmacy data availability.

The attachment for S2 also includes a table with an example of how ERG risk scores are computed for a single member.

### S8.3. Comorbid and interactions

*Detail the treatment of co-morbidities & disease interactions and provide rationale for this*

**methodology.**

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG). S8.2 also describes the ERG approach.

Co-morbidities, hierarchies and interactions for ERGs are all captured by the ERG methodology, with the ETG methodology serving as the foundation for categorizing these clinical dimensions. ERG recognizes a member's full range of co-morbidities and will add incremental weight to an individual's ERG risk score where additional co-morbidities have been observed. For example, an individual with episodes observed for Diabetes and CHF will receive a higher ERG risk score than an individual observed with Diabetes alone. Further, interactions between conditions are also captured by ERG through the use of the Severity Level methodology provided by ETG. As described in the attachment for S2, ETG uses Severity Level to classify episodes based on risk – where a higher Severity Level indicates an episode with a significant co-morbidity. For example, ETG will assign an episode of Diabetes where a co-morbidity of CHF has been observed to a higher level of severity (e.g., Severity Level 3). ERG will map a Diabetes, Level 3 episode to a higher risk ERG marker – capturing both the presence of Diabetes and the interaction with CHF. The ERG marker for CHF will also receive the same treatment.

The attachment “S5\_Population\_DataDictionary” and tab “ERG-ETG List” includes the entire mapping and hierarchies used to translate ETGs into ERGs, including how Severity plays a role in ERG assignment.

**S8.4. Clinical hierarchies**

*Detail the hierarchy for codes or condition groups used and provide rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG), including clinical hierarchies in mapping ETGs to ERG risk markers. S8.2 also provides further discussion.

The results from an ETG grouping of 12 months of medical and pharmacy services provide the inputs for ERGs. In particular, service records that have been grouped into ETGs for a single year are used as the condition identifiers for the member. The ETG base class and the Severity Level assigned to each claim record are elements used to associate an ETG to an ERG. Base ETG and Severity Level play an important role in assigning ERGs to an individual. As a rule, ERGs are not differentiated using a treatment indicator. However, the active management status of malignant neoplasm ETGs (triggered by the presence of radiation therapy or chemotherapy) is the exception. ERG assignment is not dependent on episode completion status or outlier status. ERG assignment does not vary with the number of episodes or ETGs observed for a member within the same ERG. Members with single or multiple episodes within an ERG receive identical assignments.

The attachment “S5\_Population\_DataDictionary” and tab “ERG-ETG List” includes the entire mapping and hierarchies used to translate ETGs into ERGs.

The table entries for Diabetes provide an example of how the ETG values are translated into an ERG. The Base ETGs for the Diabetes ERGs (163000 for Diabetes and 901300 for Diabetes Rx Agents, e.g., insulin) describe the observed condition. The Severity Level denotes the level of episode severity, with greater severity indicating a higher level of expected resources required. The different combinations of ETG and severity level trigger an ERG marker. Note that hierarchies are applied to ensure that only one ERG marker from a related clinical family is triggered. The hierarchy below is 0202 (for Diabetes), with a Priority value for each Base ETG and Severity Level. The lower value indicates a higher ranked Priority. Only the Base ETG and Severity Level combination with the lowest value for Priority is retained if more than one combination in the Hierarchy is observed.

In summary, an individual's ETG episodes and their severity determine their ERGs. Hierarchies are employed to ensure only the most significant episode in the hierarchy is used to trigger an ERG. With the exception of malignant neoplasm ETGs, medical treatments observed within the episode are not used in determining an individual's ERGs.

**S8.5. Clinical severity levels**

*Detail the method used for assigning severity level and provide rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG), including using ETG clinical severity levels and the ERG Risk Levels produced by ERGs. Also, please see the discussion for S8.2. Clinical Severity Levels are an integrated component of deriving an individual's array of ERGs and their ERG level of risk.

**S8.6. Concurrency of clinical events (that may lead to a distinct measure)**

*Detail the method used for identifying concurrent clinical events, how to manage them, and provide the rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG). S8.2 and S8.3 also provide a discussion of the clinical framework, including the recognition of multiple clinical conditions and their interaction in measuring risk.

**S9. Measure Construction Logic (Resource Use Measure Module 3)**

*The measure's construction logic includes steps used to cluster, group or assign claims beyond those associated with the measure's clinical logic. For example, any temporal or spatial (i.e., setting of care) parameters used to determine if a particular diagnosis or event qualifies for the measure of interest.*

Construction Logic Supplemental Attachment or URL:

*If needed, attach supplemental documentation (Save file as: S9\_Construction Logic). All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.)*

URL:

Please supply the username and password:

Attachment:

**S9.1. Brief Description of Construction Logic**

*Briefly describe the measure's construction logic.*

Please refer to the attachments to S2 and S5 for a description of the clinical framework for Episode Risk Groups (ERG).

**S9.2. Construction Logic**

*Detail logic steps used to cluster, group or assign claims beyond those associated with the measure's clinical logic.*

All of the submitted measures for Non-Condition Specific Population analysis rely on a foundation of per member per month or per 1,000 per year metrics, risk adjusted using the Episode Risk Group (ERG) methodology. ERG uses an individual's episodes of care, defined using Episode Treatment Groups (ETGs), to assess their relative risk for healthcare cost and use. The approach involves: (1) identifying individuals to be included in the resource use measurement; (2) collecting and assembling data on the health care services (service history) consumed by these individuals over a defined 12-month period; (3) using the diagnostic and procedural information from this service history to categorize each individual's mix of diseases and clinical conditions and using this mix and the ERG methodology to assess relative health risk; (4) using the 12-month service history to summarize each individual's medical and pharmacy cost and utilization, overall and by type of service; and (5) creating risk adjusted measures of cost and use, risk-adjusted using each individual's ERG results. The attached General Methods document (for S2), ETG\_ERG General Methods Construct Logic provide a high level explanation of the ETG and ERG concepts.

**S9.3. Measure Trigger and End mechanisms**

*Detail the measure's trigger and end mechanisms and provide rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG). Trigger and end mechanisms are not applicable to ERGs. There are no specific trigger and end mechanisms for the population-based measures described, other than the definition of a 12-month period (reporting period) used for the measurement. The population being measured is not specific to any condition or disease.

**S9.4. Measure redundancy or overlap**

*Detail how redundancy and overlap of measures can be addressed and provide rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG), including the use of clinical hierarchies. S8.2 and S8.3 also provide a discussion of the clinical framework, including the recognition of multiple clinical conditions and their interaction in measuring risk.

#### **S9.5.Complementary services**

*Detail how complementary services have been linked to the measure and provide rationale for this methodology.*

The attachments to S2 and S5 provide a description of the clinical framework for Episode Risk Groups (ERG), including the use of clinical hierarchies. Complementary services are not applicable to ERGs.

#### **S9.6.Resource Use Service Categories**

Inpatient services: Inpatient facility services

Inpatient services: Admissions/discharges

Ambulatory services: Outpatient facility services

Ambulatory services: Emergency Department

Ambulatory services: Pharmacy

Ambulatory services: Evaluation and management

Ambulatory services: Procedures and surgeries

Ambulatory services: Imaging and diagnostic

Ambulatory services: Lab services

#### **S9.7.Identification of Resource Use Service Categories**

*For each of the resource use service categories selected above, provide the rationale for their selection and detail the method or algorithms to identify resource units, including codes, logic and definitions.*

The following resource-use categories are included as measures for this submission.

Cost of Care per Member per Month

-- Total

-- Primary Care Core Services, Total

-- Primary Care Core Services, Visits

-- Primary Care Core Services, Other (Non-Visits)

-- ER Services

-- Hospital Services, Total

-- Inpatient Acute

-- Inpatient Non-Acute

-- Other Outpatient

-- Laboratory Services

-- Radiology Services, Diagnostic, Total

-- Radiology, MRI, CT Scan Services

-- Radiology, Other Diagnostic Services

-- Specialty Care Services, Total

-- Specialty Care, Other Diagnostic Testing Services

-- Specialty Care, Evaluation & Management Services

-- Specialty Care, Medicine Services

-- Specialty Care, Surgery Services

-- Specialty Care, Other Services

-- Pharmacy Prescription Services

Utilization, Annualized per 1,000

- PCP Visits
- Specialist Visits
- Specialist Referrals
- Total Evaluation & Management Visits
- ER Visits
- Hospital Inpatient Admits, Acute
- Hospital Inpatient Days, Acute
- Laboratory Services
- Radiology Services, Diagnostic, Total
- Radiology Services, MRI/CT Scan Services
- Radiology Services, Other Diagnostic Services
- Pharmacy Prescriptions Services

Each resource use category measure is described below, including reference to the specific codes and logic used to identify the services involved.

#### I. General Methods

In terms of general methods employed across measures, the following approaches are used:

-- Service cost – as a guideline, the service cost used in resource use measurement should reflect the actual payments or costs associated with the service or a standard-priced resource cost amount. As a further guideline, the financial amount used in resource measurement should reflect all payments for a service, including those made to the provider by payer, patient and other entities. The allowed or equivalent payment is an example.

-- Time periods – as a guideline, the services and member months included in these resource use measures should focus on a specific 12 month period, for example, services and enrollment during a calendar year.

-- Type of Service. The type of service logic for each measure is described in the sections below. Each type of service definition includes an overview of the key steps used in identifying the relevant services used in measuring cost and utilization. As an initial step, prescription pharmacy services and hospital inpatient confinements are identified (more detail below). For the remaining services:

- a. Providers are categorized into facility, anesthesiology specialties and other professional (not anesthesiology);
- b. The attached document S9.7\_RU\_Categories then describes two levels of specifications used in assigning services to a type of service category;
- c. The first table in the attachment IMAP\_TOS\_PROC includes one row per procedure code (CPT, HCPCS, Revenue). For each row, the table includes the procedure code, a short description and the columns PROFTOS, ANESTOS, OPTOS, and PCC\_TYPE. PROFTOS, ANESTOS, OPTOS include standard TOS\_I codes that are assigned to each procedure code based on whether the provider is a facility, anesthesiologist or other professional, using OPTOS, ANESTOS and PROFTOS, respectively;
- d. Some services are also assigned a value for PCC\_TYPE (described below);
- e. The second table, IMAP\_TOS, includes one row for each of the standard TOS codes included in PROFTOS, ANESTOS and PROFTOS and columns for the TOS\_I codes, ENC\_TOS, and ENC\_TOP and a brief description of the TOS\_I. ENC\_TOS and ENC\_TOP are used in defining encounters below.
- f. These two tables are used in creating the measures described below.

-- Encounters. An Encounter is contact between an individual and the health care system for a related set of services. It is based on the type of service and the type of provider for a member on a specific day. Providing the ability to view data by encounters helps convey the scope and influence of all services associated with patient-health care system meetings. The concept of an encounter is used for the utilization measures described below. The following steps are used to assign an encounter value to each service record:

- a. Hospital inpatient admissions. A hospital inpatient confinement is considered a single encounter (ENCOUNTER=1).
- b. Prescription pharmacy. A pharmacy service record (claim record) is considered a single encounter (ENCOUNTER=1).
- c. Ancillary Drug Administered Services. All Ancillary, Drugs Administered (TOS\_I values 201 thru 211), are considered an encounter (ENCOUNTER=1).

d. For all other services, the number of encounters is dependent on the Type of Service and the Type of Provider assigned to the claims. In particular, the values included in the table IMAP\_TOS for Encounter Type of Service (ENC\_TOS) and Encounter Type of Provider (ENC\_TOP) are used. As shown in IMAP\_TOS, both the Encounter TOS and Encounter TOP are based on Type of Service (TOS\_I) and can be assigned using table IMAP\_TOS, and joining on TOS\_I from the service record.

e. For these other services, medical service records are sorted by Member, Date of Service, ENC\_TOS and ENC\_TOP.

f. The calculation of encounters for services other than emergency room, laboratory and radiology services is 1 divided by the total number of records in the combination of Member, Date of Service, Encounter TOS, and Encounter TOP.

g. Additional logic. Emergency room, laboratory and radiology services need to have a different logic because these services often are billed using both a technical and professional component – where both a professional provider and facility provider are involved.

h. Any service with the following Encounter TOS values will use the additional logic when calculating encounters.

-- ER professional and facility services (ENC\_TOS=24)

-- Lab and pathology professional and facility services (ENC\_TOS=29, 31)

-- Diagnostic and therapeutic radiology professional and facility services (ENC\_TOS=47, 49)

For the services using the additional logic, for each Member, Date of Service, and ENC\_TOS distinct combination, sum the number of records for each of the Encounter TOP values of 1 and 2.

-- Two cases can exist for these services: there are both facility and professional records in the combination; or there are only facility records or only professional records.

-- Where at least one facility record and one professional record, the encounter is divided up equally between the professional and technical components. Therefore, the calculations for Encounters for these situations are: 0.5 divided by {number of records with Encounter TOP = 1 (Facility)} and 0.5 divided by {number of records with Encounter TOP = 2 (Professional)}

-- Where all records have the same ENC\_TOP value, the encounters calculation will be the generic calculation: 1 divided by {number of records in the combination of Member, Date of Service, Encounter TOS, Encounter TOP}

-- Cost and Utilization Measures. The actual resource use is the sum of the costs or encounters for those services observed for an individual member. Measures of actual cost or use across members is the sum of cost or use divided by the total number of member months for those members included in the measurement.

## II. Cost of Care per member per month

Total Service Costs. Total services costs include the total costs for all services included in the selected members.

Primary Care Core Services Costs. Primary Care Core (PCC) services include a select group of services traditionally performed by an individual's primary care physician. The PCC concept is similar to the idea of the group of services typically included in a primary care capitation definition. In particular, these services include non-inpatient evaluation and management services and selected imaging, diagnostic and minor procedure services. PCC Services are identified as follows:

-- First select services rendered by a primary care provider. The identification of primary care providers can be made configurable. At a minimum, these providers include the individual's assigned PCP. Further, to include covering providers, other primary care providers in the network are included, defined using either a list of provider ids or all physicians with a specialty of internal medicine, family practice, geriatric medicine, adolescent medicine and pediatrics, or both (e.g., using a list to include specific OB/GYN providers in addition to all providers with primary care specialties).

The CPT procedure code on the selected services is then used to identify:

-- PCC Services Total

-- PCC Services, Visits and

-- PCC Services Other.

The CPT procedure codes assigned to these categories are included in the column PCC\_TYPE in the attachment table IMAP\_TOS\_PROC. Values of "Visit" and "Other" are used. Blank entries for a procedure code indicate that they are not included as a PCC service.

ER Service Costs. These services include professional and facility emergency room services.

- Professional ER Services are identified as having values of 1803 thru 1805 in IMAP\_TOS
- Facility ER Services are identified as having values of 801 and 802 in IMAP\_TOS

Hospital Costs. Includes the facility cost of an inpatient stay and services provided by an outpatient facility other than those defined elsewhere (e.g., ER, Lab, Radiology, Other). These services include professional and facility emergency room services.

- Inpatient Acute Services are identified as having a value of 601 in IMAP\_TOS
- Non-Inpatient Acute Services are identified as having a value of 703 in IMAP\_TOS
- Other Outpatient Hospital Services are identified as having values of 901 thru 1399 in IMAP\_TOS

Laboratory Services. These services include professional and facility laboratory services, other than those professional services assigned to Primary Care Core.

- Professional Lab Services are identified as having values of 2101-2118 (Professional, Lab) or 2501-2511 (Professional, Pathology) in IMAP\_TOS
- Facility LAB Services are identified as having values of 1001 thru 1005 in IMAP\_TOS

Radiology Services, Diagnostic. These services include diagnostic professional and facility radiology services, other than those professional services assigned to Primary Care Core:

- Professional Radiology, MRI, CT Scan Services are identified as having values of 2901 thru 2903 in IMAP\_TOS
- Facility Radiology, MRI, CT Scan Services are identified as having values of 1201, 1203, 1204 in IMAP\_TOS
- Professional Radiology, Other Diagnostic Services are identified as having values of 2905, 2906, 2907, 2908 in IMAP\_TOS
- Facility Radiology, Other Diagnostic Services are identified as having values of 1202, 1206, 1207, 1208 in IMAP\_TOS
- Note that Therapeutic Radiology is included in Specialty Care Services, Medicine

Specialty Care Services. These services include those services not identified above and are categorized as follows (including TOS\_I values in IMAP\_TOS):

Specialty Care, Other Diagnostic Testing

- 1701-1733 (Professional, Diagnostic)

Specialty Care, Evaluation & Management

- 1601-1609 (Professional, Consult)
- 2001-2013 (Professional, Inpatient Visit)
- 2401-2411 (Professional, Office Visit)
- 2717-2719 (Professional, Home Visit)
- 2729-2731 (Professional, Domiciliary/Rest Home Visit)
- 2801-2807 (Professional, Preventive Medicine)
- Excludes any services assigned to Primary Care Core

Specialty Care, Medicine

- 1401-1405 (Professional, Allergy Tests)
- 1901-1901 (Professional, Immunizations / Injection)
- 2909-2915 (Professional, Therapeutic Radiology)

Specialty Care, Surgery

- 3001-3214 (Professional, Surgery)

Specialty Care, Other

- 101-131 (Ancillary, DME)
- 201-211 (Ancillary, Drug Admin)
- 301-307 (Ancillary, Home Health)
- 401-403, 431 (Ancillary, Services and Supplies)
- 405-414 (Ancillary, Med and Surg Supplies)
- 416-424 (Ancillary, Orthotics)
- 425-429, 432 (Ancillary, Supplies)
- 433-436 (Ancillary, Oxygen/Resp)
- 437-446 (Ancillary, Prosthetics)
- 448-449 (Ancillary, Vision)
- 450-459 (Ancillary, Rpt/Trking)
- 501-503 (Ancillary, Transportation)

- 1501-1599 (Professional, Anesthesia)
- 2203-2212 (Professional, Mental Health)
- 2302-2317 (Professional, Obstetrics)
- 2601-2625 (Professional, Phys Medicine/Rehab)
- 2701-2715, 2721-2728 (Professional, Professional Other)

### III. Utilization per 1,000

Encounters are used for all utilization counts for the utilization measures described below.

Evaluation and Management Visits. E&M Visit services by all professional providers and include the following TOS\_I values from IMAP\_TOS:

- 1601-1609 (Professional, Consult)
- 1803-1805 (Professional, ER)
- 2001-2013 (Professional, Inpatient Visit)
- 2401-2411 (Professional, Office Visit)
- 2717-2719 (Professional, Home Visit)
- 2729-2731 (Professional, Domiciliary/Rest Home Visit)
- 2801-2807 (Professional, Preventive Medicine)

PCP Visits. PCP Visits include E&M visits rendered by a PCP or a PCP covering provider (see discussion above for PCC services).

Specialist Visits. Specialist Visits include E&M visits rendered by a provider other than a PCP or a PCP covering provider (see discussion above for PCC services).

Specialist Referrals. A Specialist Referral is indicated using E&M visits and indicates the first instance of the Provider for an E&M service for that member. A specialist is a provider other than a PCP or a PCP covering provider (see discussion above for PCC services).

ER Visits. Indicates an ER service encounter. ER services are defined by a TOS\_I value of Facility Outpatient, ER (801, 802) or Professional, ER (1803, 1805).

Radiology Services, Diagnostic. Radiology utilization is defined as an encounter for the following Types of Service:

- MRI/Cat Scans – Facility Outpatient (1201, 1203, 1204), Professional (2901, 2902, 2903)
- Other Diagnostic Radiology – Facility Outpatient, Diag. Radiology (1202, 1206, 1207, 1208), Professional, Diagnostic Radiology, Nuclear Medicine (2905 thru 2908)

Laboratory Services. Laboratory utilization is defined as an encounter for the following Types of Service:

- Facility Outpatient, Lab (1001, 1003, 1005)
- Professional, Lab, (2101 thru 2118)
- Professional, Pathology (2501 thru 2511)

Pharmacy Services. A pharmacy service prescription record.

*If needed, provide specifications URL (preferred) or as an attachment:*

URL:

Please supply the username and password:

Attachment: S9.7\_RU\_Categories-634369201486799996.xls

### S9.8. Care Setting; *provides information on which care settings the measure encompasses.*

Ambulatory Care : Ambulatory Surgery Center (ASC)

Ambulatory Care : Clinic/Urgent Care

Ambulatory Care : Clinician Office

Emergency Medical Services

Ambulance  
Home Health  
Hospice  
Hospital/Acute Care Facility  
Imaging Facility  
Laboratory

**S10. Adjustments for Comparability (Resource Use Measure Module 4)**

*External factors can mingle and affect or confound a measure's result. Confounding occurs if an extraneous factor causes or influences the outcome (e.g., higher resource use) and is associated with the exposure of interest (e.g., episode of diabetes with multiple co-morbidities). Measure developers often include steps to adjust the measure to increase comparability of results among providers, employers, and health plans.*

**S10.1. Risk adjustment method**

*Define risk adjustment variables and describe the conceptual, statistical, or other relevant aspects of the model and provide rationale for this methodology.*

The attachment for S2 and responses to S5 above provided a description of the approach used by ERG to assign a risk score and risk level to an individual. The attachment for S5, "S5\_Population\_DataDictionary" and tab "ERG Risk Categories" describe the risk ranges used to assign an individual's ERG risk score to an ERG risk level. The ERG Risk Level determined from an individual's ERG risk score defines the "risk adjustment" unit used for the submitted measures. A higher ERG Risk Level indicates a higher level of risk and a greater expectation around the medical and pharmacy services required for an individual's health care for the 12-month measure reporting period.

Risk adjustment is an important step in resource use measurement. Measures of the cost of care for an organization or provider can be impacted by the underlying risk and severity of the patients they enroll or manage. Case-mix or risk adjustment addresses these differences and supports more consistent and equitable comparisons. These approaches allow a focus on differences in resource use deriving from differences in the practice of medicine rather than differences in the mix of patients.

The level of risk for a patient is used to support risk adjustment. The risk adjustment approach includes three important steps:

- Compute the observed experience for the provider being measured, across all patients to be included in the comparison;
- Compute the experience for peers or a best practice benchmark. Compute this experience at the level of the risk adjustment, in this case ERG Risk Level. For a peers benchmark, average cost across all peers for the ERG risk level can be computed;
- Compare the observed experience with the risk adjusted peers or benchmark experience – often called the "expected" result. This expected result is adjusted to reflect both the peers/benchmark levels of performance and also the provider's own case mix of patients by ERG risk level. The ratio of observed to expected results can be termed the relative cost ratio and is a risk adjusted measure.

The attachment S10\_Risk Adjustment Method Example Population.xls provides an example comparing the cost of care performance of two internists using ERG risk levels to create a comparison of overall cost PMPM.

In the last column of the example "Relative Cost of Care Ratio" a relative cost ratio less than 1.00 indicates that the observed cost PMPM for a provider is less than his peers. As shown, Dr. Jones cost is lower than peers and Dr. Smith is higher cost than peers. An additional report using the same measure information could summarize results by type of service, or specific utilization such as the use of a specific diagnostic test or treatment, providing greater insights into the factors behind differences in resource use. The risk adjustment for these measures would use the same approach as described here for total cost.

*If needed, provide supplemental information via a web URL (preferred) or attachment with the risk adjustment specifications.*

URL:

Please supply the username and password:

Attachment: S10\_Risk Adjustment Method Example Population.xls

## S10.2. Stratification Method

*Detail the stratification method including all variables, codes, logic or definitions required to stratify the measure and rationale for this methodology*

As described in the attachments for S2 and S5 and the responses for S8, S9 and S10.1, ERG risk and ERG Risk Level are used to stratify individuals for risk adjustment. The methodology can be applied across all individuals. As a guideline, results can be stratified by geographic area or by Payer type, if relevant, where separate measures are created for each strata. The underlying methodologies would be equivalent for each strata, however, benchmarks and comparisons would be made separately by strata.

## S10.3. Costing Method

*Detail the costing method including the source of cost information, steps to capture, apply or estimate cost information, and provide rationale for this methodology.*

The measure does not specify the specific costing method to be used for cost of care resource use measures. The financial amounts used should be complete and valid, reflecting the actual payment or costs associated with the service or a standard-priced resource cost amount. As a guideline, the financial amount used in resource measurement should reflect all payments for a service, including those made to the provider by payer, patient and other entities. The allowed or equivalent payment is an example

## S11. Measure Reporting (Resource Use Measure Module 5)

*The measure developer must determine which of the following Measure Reporting functions: attribution approach, peer group, outliers and thresholds, sample size, and benchmarking and comparative estimates, are submitted as measure specifications or as guidelines. Specifications limit user options and flexibility and must be strictly adhered to; whereas guidelines are well thought out guidance to users while allowing for user flexibility. If the measure developer determines that the requested specification approach is better suited as guidelines, please select and submit guidelines, otherwise specifications must be provided.*

### S11.1. Detail attribution approach

*Detail the attribution rule(s) used for attributing costs to providers and rationale for this methodology (e.g., a proportion of total measure cost or frequency of visits during the measure's measurement period) and provide rationale for this methodology.*

Attributing patients to appropriate physicians and groups is a challenging step in cost measurement. As a guideline, some principles are involved in determining a valid approach to be used in assigning patients:

- The approach must be valid conceptually. It must be defensible, understandable and accepted by providers, health plans, and other users of the measurement results;
- The approach must be supported by readily available information, including the outputs from an episode grouping;
- The approach should be robust across applications – working well for different sources of health plan data, patient populations and over time;
- The approach should be flexible and consider the characteristics of the specialists being compared and the nature and severity of their patients and episodes;
- Population-based approaches should be supported. A population, or panel-based approach is sometimes used when measuring performance for primary care physicians (PCPs), in particular where providers are performing a gatekeeper function for a population of members. In this case, responsibility for a member's care may be attributed to the member's PCP — whether or not the PCP provided any of the services for that member during the time period.
- “Sufficient” evidence of the provider's responsibility for the patient should exist.

As a guideline, the following approach can be used for attribution.

Physician Attribution using a Primary Care, Population-based Approach. As noted above, a “population” or “panel” based approach is sometimes used when measuring performance for peer groups comprised of primary care physicians. In particular, this approach is often considered where the PCPs are performing a gatekeeper function for a population of

members. In this case, responsibility for a member's qualified patients may be attributed to the member's PCP — whether or not the PCP provided any of the services for that member.

This approach involves:

-- Identification of a PCP for each member. This identification can often be obtained from the member's eligibility record which can include a notation of their assigned PCP for a period of time. Alternatively, a PCP can be "imputed" for a member based on that primary care specialist providing the greatest number of services or service costs for selected primary care services. When imputing, the list of eligible providers is typically limited to those physicians involved in primary care. Using either approach, a member is linked to a PCP for a defined period of time.

Physician Attribution – Other Issues. Some general issues around episode attribution remain. The first involves tie-breakers. For example, if two physicians own the same number of patient visits with a member within a period of time, the physician with the greatest amount of primary care core services costs could be selected.

A second issue involves setting appropriate thresholds to determine sufficient activity. As noted above, most activity-based attribution approaches involve some screening of the winning provider to ensure that they owned sufficient activity relative to their peers and to other providers during the course of the time period.

#### **S11.2. Identify and define peer group**

*Identify the peer group and detail how peer group is identified and provide rationale for this methodology*

Guidelines : Peer groups define the group of physicians being compared. For example, a common practice in physician measurement is to assess the actual costs for those patients attributed to an individual physician or practice and compare actual costs to peer results, risk adjusted to support more valid comparisons. The peer values use in these comparisons will be influenced by the selection of providers included in the peer group.

In defining a peer group for cost of care measurement, most organizations will include physicians from the same specialty or area of expertise. For organizations with a network covering broad geographic area, some distinction by provider geography can also be used. Internal medicine, cardiology, or general surgery within a certain geographic area are examples of a peer group. Although not directly related to defining a group of providers as peers, many organizations provide separate measurements by line of business, separating results and peer comparisons by commercial, Medicare and Medicaid products.

#### **S11.3. Level of Analysis:**

Clinician : Group/Practice

Clinician : Individual

Clinician : Team

Facility

Health Plan

Integrated Delivery System

Population : County or City

Population : National

Population : Regional

#### **S11.4. Detail measure outliers or thresholds**

*Detail any threshold or outlier rules and decisions based on measure resource use and provide rationale for this methodology*

Guidelines : Outlier episodes – as a guideline, high outlier cost patients should be included, but all costs truncated at the high outlier cost threshold used for the patient (a technique called "winsorization"). Where costs by type of service are used in measurement, individual service costs can be pro-rated to reflect the truncated total cost for a high cost outlier patient.

#### **S11.5. Detail sample size requirements**

*Detail the sample size requirement including rules associated with the type of measure*

Guidelines : The choice of sample size is less important using techniques that include statistical methods that

find only statistically significant difference. If your choice of sample size is low, you will not find many cases that are statistically significantly different. A sample size of 30 is chosen because this is when the normal distribution is a good approximation of the student's t distribution. However, the choice of sample size is less critical when using tests of statistical significance.

#### S11.6. Define benchmarking or comparative estimates

*Detail steps to produce benchmarking and comparative estimates and provide rationale for this methodology*

Guidelines : The response to section S10.1 includes examples on how to compare the results for a physician with that of their peers or with external best practice benchmarks. As a guideline, in making comparative estimates, the following considerations should be made:

- As described in S10.1, comparative results should be risk adjusted to support more valid comparisons;
- Differences in fee schedules and contracts – for some comparisons using cost of care, differences between actual practice and the benchmark can be influenced by different unit pricing assumptions. In these cases standard pricing or general adjustments to cost levels can be made; and
- Practice styles and service utilization can differ between geographic areas and also between physicians in different specialties. Although comparisons across areas and specialties can provide insights, proper care should be taken in interpreting and communicating results.

#### S12. Type of Score:

Continuous variable  
Count  
Rate/Proportion  
Ratio

*If available, please provide a sample report:*

[S12\\_sample\\_score\\_report\\_POP.pdf](#)

#### S12.1. Interpretation of Score.

*(Classifies interpretation of score (s) according to whether higher or lower resource use amounts is associated with a higher or lower score, a score falling within a defined interval, or a passing score, etc)*

For the continuous cost measures (also a rate), an increase in costs can be interpreted as an increase in the resources used to diagnose, manage and treat the patients in question. This score provides a representation of the weighted utilization expended, where the weights are based on the cost assigned to each individual service.

For the counts of utilization measures per 1,000 (also a rate), an increase in utilization can be interpreted as an increase in the resources used to diagnose, manage and treat the patients in question. This score provides a representation of un-weighted utilization. Counts of utilization measures are most useful when the services being aggregated are similar (e.g., inpatient admits, E&M visits, MRI services).

The risk adjusted observed to expected cost or utilization ratio (O/E ratio) includes three important steps:

- Compute the observed experience for the provider being measured, across all patients to be included in the comparison;
- Compute the experience for peers or a best practice benchmark. Compute this experience at the level of the risk adjustment, in this case ERG Risk Level. For a peers benchmark, average cost PMPM or use per 1,000 across all peers for the ERG Risk Level can be computed;
- Compare the observed experience with the risk adjusted peers or benchmark experience – often called the “expected” result. This expected result is adjusted to reflect both the peers/benchmark levels of performance and also the provider's own case mix of patients by condition and level of severity. The ratio of observed to expected results can be termed the relative cost ratio and is a risk adjusted measure.

The O/E ratio (relative resource use ratio) can be interpreted based on its magnitude and relationship to a peer average or

other guidelines. A relative cost ratio less than 1.00 indicates that the observed resource use per episode for a provider is less than his peers. A relative cost ratio greater than 1.00 indicates that the observed resource use for a provider is greater than his risk adjusted peers.

### S12.2. Detail Score Estimation

*Detail steps to estimate measure score.*

The measures described in this submission include continuous cost measures, counts of utilization, rates and proportions (per episode), and the ratio of observed to expected results, based on risk adjusted comparisons. The continuous cost measures, counts of utilization, and rates per episode are described in detail in S9.5. The details involved in computing the O/E ratio measure is provided in S10.1.

### S12.3. Describe discriminating results approach

*Detail methods for discriminating differences (reporting with descriptive statistics--e.g., distribution, confidence intervals)*

In all of these measures we end up with an O/E ratio for a provider. In order to determine the statistical accuracy of this measure we start by measuring the variance of this metric:

$\text{Var}(\text{O/E})$

The Variance of this metric has been estimated by the following expression in a number of journal articles[1]:

$\text{Var}(\text{O/E}) = (\text{Sum}(\text{Var}(\text{O}_i)) / [\text{Sum}(\text{E}_i)]^2$

Where  $\text{Var}(\text{O}_i)$  is the variance for each of the physician's episodes across all episodes in it's statistical unit for the peer group.

Then the standard error (SE) for this measurement is  $\text{Sqrt}(\text{Var}(\text{O/E}))$ .

Finally, a 95% confidence interval could be calculated by:

$(\text{O/E} - 1.96 * \text{SE}, \text{O/E} + 1.96 * \text{SE})$

Alternatively, a 90% confidence interval could be calculated by:  $(\text{O/E} - 1.64 * \text{SE}, \text{O/E} + 1.64 * \text{SE})$

[1] Adams et al. BMC Health Services Research 2010, 10:57 <http://www.biomedcentral.com/1472-6963/10/57>

## TESTING/ANALYSIS

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. See guidance on measure testing.

Eval  
Rating

TESTING ATTACHMENT (5MB or less) or URL:

*If needed, attach supplemental documentation (Save file as: SA\_Reliability\_VValidity Testing) All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.*

URL:

Please supply the username and password:

Attachment: SA\_Reliability\_VValidity Testing\_POP.xls

### SA1. Reliability Testing

*For each module tested or for the overall measure score:*

#### SA1.1. Data/sample

*(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*

Different samples of data are used in testing ETG, ERG and the Resource Use Measures described in this submission.

H ☐  
M ☐

2a2

The general source of information is the Ingenix National health care services benchmark database. This database describes enrollment, medical and pharmacy services, and providers for a population of more than 25 million covered lives. The data used in the testing described in this submission was primarily for commercial non-elderly individuals and covered the years 2006 thru 2010, depending on the test. The primary test databases used to support the tests described in the SA section are as follows:

- 4 million member sample used for validity and reliability of the ETG/ERG methodology and the software used for ETG/ERG processing;
- 250,000 member sample, with manipulated data for content validation testing of the post-ETG/ERG processing associated with Resource Utilization measures (measures described in S9.5);
- 7 million member sample from 9 health care organizations used for reliability assessment (consistency across data sources). This sample was also used to support the empirical estimates for the Importance section of this submission (IM1)

## SA1.2. Analytic Methods

*(Describe method of reliability testing and rationale)*

Reliability refers to the consistency of a measure. A measure is considered reliable when the same result is produced repeatedly. Reliability of ETG/ERG and Resource Utilization Measures are judged based upon an internal consistency reliability approach. The first level of internal consistency reliability focuses on high-level parallel processing tests and regressions performed by internal Quality Assurance (QA) teams. This level focuses on assessment of results compared to a baseline set of expected results developed based upon the experience of the benchmark described above in SA1.1.

The second level of internal consistency reliability involves detailed parallel processing comparisons between ETG/ERG and Resource Use Measure software and SAS-based software prototypes. Software prototypes are developed and maintained by analysts familiar with the detailed methodology of the measures for the purpose of Content Validation (CV). This form of parallel reliability testing requires that the results of both the software and prototype match exactly and are executing the logic in accordance with methodological specifications. Observed differences in the output are researched and resolved prior to releasing the software for use. Multiple parallel processing comparisons are performed to assure that the software is producing reliable results using a variety of processing configuration options and data input scenarios.

As an example, the text below provides the Table of Contents for an ETG testing plan for ETG Version 7.0. A similar plan is used for ERG testing. The plan includes processes around data used, test cases created, comparison of software results with those produced by a SAS prototype (to determine matching across parallel implementations of the methodology), and a review by clinical analysts to assess face validity. A similar testing approach is used for the resource use measures that are processed following ETG grouping.

### ETG TEST PLAN DOCUMENT – EXAMPLE TABLE OF CONTENTS

#### SECTION 1—OVERVIEW

##### 1.1 PURPOSE OF TEST PLAN DOCUMENT

##### 1.2 TESTING APPROACH AND DELIVERABLES

##### 1.3 SCOPE OF TESTING

##### 1.4 DATA

##### 1.5 ETG GROUPE

#### SECTION 2—BENCHMARK TEST CASES

##### 2.1 ACCOUNTING OF GROUPED VS. UNGROUPED RECORDS

##### 2.2 DISTRIBUTION BY ETG

##### 2.3 DISTRIBUTION BY MPC

##### 2.4 DISTRIBUTION BY EPISODE COMPLETENESS

##### 2.5 DISTRIBUTION BY OUTLIERS

##### 2.6 EPISODE AGE/GENDER PROFILE

#### SECTION 3—FEATURE-RELATED TEST CASES

##### 3.1 COMPARISON OF SOFTWARE TO PROTOTYPE

##### 3.2 SEVERITY ADJUSTMENT

##### 3.3 COMPLICATIONS

##### 3.4 COMORBIDITIES

##### 3.5 TREATMENT INDICATORS

##### 3.6 EPISODE INDICATORS

#### SECTION 4—REVISION HISTORY



Finally, the results are applied to the healthcare data of different organizations to assess both the ability of the organization's data to support the measurements and also the consistency of results across the organizations. This assessment of reliability also provides evidence that the measures are being applied in a consistent and valid way.

### SA1.3. Testing Results

*(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*

The extensive testing of ETG/ERG produces volumes of results across the test cases and other concepts described above. In terms of validity and assessing the reliability of the implementation, testing of the measurement software with the parallel SAS prototype involves iterations until a high degree of matching of results is observed (over 99.9%). The statistic used in this testing is the exact match of the grouping of records and assignment of resource measures. The difference in the result for each measure between the methodology and prototype is calculated and differences equal to zero are considered an exact match.

### SA1.4. Finding statement(s)—(i.e., is the measure deemed reliable, limitations identified)

As noted in SA1.3, the findings on reliability and validity suggest the measures could be applied in a consistent way, the results matched well to clinical expectations, and the results from the measurement software were consistent with those produced by a parallel process using prototype implementation of the methodologies.

## SA2. Validity Testing

*For each module tested or for the overall measure score:*

### SA2.1. Data/Sample

*(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*

Different samples of data are used in testing ETG/ERG and the Resource Use Measures described in this submission. The general source of information is the Ingenix National health care services benchmark database. This database describes enrollment, medical and pharmacy services, and providers for a population of more than 25 million covered lives. The data used in the testing described in this submission was primarily for commercial non-elderly individuals and covered the years 2006 thru 2010, depending on the test. The primary test databases used to support the tests described in the SA section are as follows:

- 4 million member sample used for validity and reliability of the ETG/ERG methodology and the software used for ETG/ERG processing;
- 250,000 member sample, with manipulated data for content validation testing of the post-ETG/ERG processing associated with Resource Utilization measures (measures described in S9.5);
- 7 million member sample from 9 health care organizations used for reliability assessment (consistency across data sources). This sample was also used to support the empirical estimates for the Importance section of this submission (IM1)

### SA2.2. Analytic Method

*(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*

Also, please see our responses to SA1 which relate to both reliability and validity.

Validity determines if the output of the measure is accurate. The measure must be valid in order for the results to be accurately applied and interpreted. Validity of a measure is not determined by a single statistic, but by evaluating the complete result of the measures and demonstrating the relationship between the result and the intended purpose of the measure. Validity of ETG/ERGs and Resource Use Utilization Measures are judged based upon both content validity and face validity.

Content validation testing involves detailed parallel processing comparisons between ETG/ERG and Resource Use Utilization Measure software and SAS-based software prototypes. Software prototypes are developed and maintained by analysts familiar with the detailed methodology of the measures for the purpose of Content Validation (CV). This form of parallel testing requires that the results of both the software and prototype match exactly and are executing the logic in accordance with methodological specifications. Observed differences in the output are researched and resolved

2b2

H ☐  
M ☐  
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<p>prior to releasing the software for use. Multiple parallel processing comparisons are performed to assure that the software is producing valid results using a variety of processing configuration options and data input scenarios. The statistic used in this testing is the exact match of the grouping of records and assignment of resource measures. The difference in the result for each measure between the methodology and prototype is calculated and differences equal to zero are considered an exact match.</p> <p>The face validity approach assesses if the measure result is reasonable and functioning according to expectations. This form of validation is most typically performed when modifications to the methodology intentionally change the result of the measure. When this occurs a pre- and post-modification parallel run is created and changes in the measure output are validated for accuracy at face value.</p> <p><b>SA2.3. Testing Results</b>  <i>(statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)</i></p> <p>Please see our responses to SA1 which relate to both reliability and validity.</p> <p><b>SA2.4. Finding statement(s)—(i.e., is the measure deemed reliable, limitations identified)</b></p> <p>Please see our responses to SA1 which relate to both reliability and validity.</p>	
<p><b>SA3. Testing for Measure Exclusions</b></p> <p><b>SA3.1. Describe how the impact of exclusions (if specified) is transparent as required in the criteria</b></p> <p>In terms of resource use measure construction following ETG/ERG grouping, no additional data inclusion or exclusion are applied.</p> <p><b>SA3.2. Data/sample for analysis of exclusions</b>  <i>(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)</i></p> <p>Not Applicable for ERG and the non-condition specific measures.</p> <p><b>SA3.3. Analytic Method</b>  <i>(Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)</i></p> <p>Not Applicable for ERG and the non-condition specific measures.</p> <p><b>SA3.4. Results</b>  <i>(statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses)</i></p> <p>Not Applicable for ERG and the non-condition specific measures.</p> <p><b>SA3.5. Finding statement(s)-- (i.e., is the measure deemed reliable, limitations identified)</b></p> <p>Not Applicable for ERG and the non-condition specific measures.</p> <p><b>SA4. Testing Population</b>  <i>Which populations were included in the testing data? (Check all that apply)</i></p> <p>Commercial</p>	<p>2b3</p> <p>H <input type="checkbox"/>  M <input type="checkbox"/>  L <input type="checkbox"/>  I <input type="checkbox"/></p>
<p><b>SA5. Risk adjustment strategy</b></p> <p>Refer to items S10.1 and S10.2 to rate this criterion.</p>	<p>2b4</p> <p>H <input type="checkbox"/></p>



-- HCO #2 uses ETG output to analyze utilization patterns and identify potential diseases and populations to target for intervention. ERGs are used to adjust the average and comparison population expenditures and Specialty profiles are created using both ETG and ERG results. ERG scores are used to identify patients who could be potential high utilizers.

-- Health Care Organization #3: Physician Profiling and Clinical Benchmarking

-- HCO #3 has embarked upon an initiative to use ETG information for clinical reporting and benchmarking. ERG output complements the ETG information for underwriting and physician profiling programs as well.

-- Health Care Organization #4: Provider Specialty Profiling and Predictive Modeling

-- HCO #4 utilizes Resource Use Measures and ETG to identify variations in practice patterns, measure performance and examine utilization and disease management. The primary focus is on high cost specialties and ETGs are used to identify the top 5 conditions to support specialty profiles and cost comparisons and drill downs. ERG scores are used to risk adjust PCP profiles to adjust for patient severity.

Please note that Health Care Organization names were not provided to protect the confidentiality of our users. HCO names for reference purposes are available upon request.

#### U1.2. Use in QI

*(If used in improvement programs, provide name of program(s), locations, Web page URL(s)).*

Examples of ETGs, ERGs and Resource Use Measures in action within health care industry quality improvement initiatives include:

-- Health Care Organization #5: Internal Quality Improvement – Disease Management

-- HCO #5 utilizes 30 months of medical and pharmacy data totaling more than 17 million claim lines to support identification of member risk and stratification of members for care management teams. ETG and ERG groupers are embedded within their claims datamart with other sources of data and support the identification of clinical care gaps and impactable dollars for quality improvement.

-- Health Care Organization #6: Employer Group Utilization Reports to Identify Provider Variance

-- HCO #6 generates Employer or Account Group Utilization Reports which includes a global view of ETGs for the population. These reports are used to identify the top 5 ETGs where variance is the greatest to target specific procedures for a particular ETG in order to improve quality for the Employer group.

-- Health Care Organization #7: Cesarean Section Study

-- HCO #7 conducted a study on Cesarean Section, Infertility and multiple births using ETGs. Providers with high rates of Cesarean Section were identified and compared based upon severity indices. The study determined that multiple births were a significant contributor to a market's cost and procedure variances. The study further identified infertility treatment specialists who need improvement based upon the comparison to their peers of best practices and procedures.

Please note that Health Care Organization names were not provided to protect the confidentiality of our users. HCO names for reference purposes are available upon request

#### U1.3. Use for other Accountability Functions (payment, certification, accreditation)

*(If used in a public accountability program, provide name of program(s), locations, Web page URL(s)).*

Other examples of industry use of ETGs, ERGs and Resource Use Measures include Provider Pay for Excellence programs and Member Cost Analysis Tools. Specific examples include:

-- Health Care Organization #8: Provider Analytics Team

-- HCO #8 leverages the power of ETGs and Resource Use Measures to support their internal Provider Analytics team. This team manages the Provider Profiling program to support the Medical Directors' high-level physician review and network physician meetings as well as bi-annual provider profiling reports. In addition to provider profiling the Provider Analytics team uses ETG and Resource Use Measures to Impute PCP information to identify gaps in care, support physician group award programs and Patient Centered Medical Home projects.

-- Health Care Organization #9: Member Cost Analysis Tools

-- HCO #9 has created a patient website with cost calculation tools to provide detailed treatment costs for the patient based upon ETG analysis. The website includes tips on how to reduce costs as well as a pharmacy co-pay calculator. Users may access median cost reports for an ETG as well as cost ranges for procedures based upon CPT codes, pharmaceuticals and office visits. The website also provides comparison data for providers based upon performance indices.

Please note that Health Care Organization names were not provided to protect the confidentiality of our users. HCO names for reference purposes are available upon request.

<p><b>U2. Testing of Interpretability</b>  <i>(Provide a rationale for why the measure performance results are meaningful, understandable, and useful to the intended audience(s) for both public reporting and quality improvement).</i></p> <p><b>U2.1. If understanding or usefulness was demonstrated</b>  <i>(e.g., through systematic feedback from users, focus group, cognitive testing, analysis of quality improvement initiatives) describe the data, methods, and results.</i></p> <p>The assessment of the usability of the results from ETG-based and ERG-based measures of resource use is primarily from two entities: the ETG Medical Advisory Board and the Ingenix User Forums around these measures. The Medical Advisory Board is comprised of medical directors from healthcare organizations that employ episode based measures to assess resource use. Input and feedback from these clinicians inform both the ETG and ERG methodologies themselves and also how they are used in creating and sharing provider measurement results. The Ingenix User Forums include technical experts from organizations that use ETG, ERG and non-condition resource use measures. Similar to the Medical Advisory Board, input and feedback from this group informs these methodologies, but primarily is focused on how results are used to create and share provider measurement results.</p>	<p>3b</p> <p>H <input type="checkbox"/>  M <input type="checkbox"/>  L <input type="checkbox"/>  NA <input type="checkbox"/></p>
<p><b>U2.2. Resource use data and result can be decomposed for transparency and understanding.</b>  <i>Refer to items S11 -S12.3.</i></p>	<p>3c</p> <p>H <input type="checkbox"/>  M <input type="checkbox"/>  L <input type="checkbox"/>  I <input type="checkbox"/></p>
<p><b>U3. If there are similar or related measures (either same measure focus or target population) measures (both the same measure focus and same target population), list the NQF # and title of all related and/or similar measures.</b></p> <p><b>U3.1. If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized?</b></p> <p><b>U3.2. If the measure specifications are not completely harmonized identify the differences, rationale, and impact on interpretability and data collection burden.</b>  <i>Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)</i></p>	<p>3d</p> <p>H <input type="checkbox"/>  M <input type="checkbox"/>  L <input type="checkbox"/>  I <input type="checkbox"/>  NA <input type="checkbox"/></p>
<p><b>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Usability</i>?</b></p>	
<p><b>Steering Committee: Overall, to what extent was the criterion, <i>Usability</i>, met?</b>  <b>Rationale:</b></p>	<p>H <input type="checkbox"/>  M <input type="checkbox"/>  L <input type="checkbox"/></p>
<p><b>FEASIBILITY</b></p>	
<p><b>Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement.</b></p>	<p><b>Eval Rating</b></p>
<p><b>F1. Data Elements Generated as Byproduct of Care Processes</b>  <i>How are the data elements needed to compute measure scores generated? Data used in the measure are:</i></p>	<p>4a</p> <p>H <input type="checkbox"/></p>

<p>Generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition</p> <p>Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)</p>	M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/>
<p><b>F2. Electronic Sources</b>  <i>Are the data elements needed for the measure as specified available electronically? (Elements that are needed to compute measure scores are in defined, computer-readable fields)</i></p> <p>ALL data elements in electronic claims</p> <p><b>F2.1.</b> If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.</p>	4b           H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/>
<p><b>F3. Susceptibility to Inaccuracies, Errors, or Unintended Consequences</b>  <i>Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to minimize or prevent. If audited, provide results.</i></p> <p>The main source of inaccuracies relate to small sample size. There are lower limits on the number of patients for a given provider or specialty that are allowed for inclusion in the analysis. Sample sizes that are determined to be too small are eliminated from the analysis.</p> <p>These situations will occur infrequently, as the sample sizes that are customarily dealt with are very large. A methodology for applying statistical techniques to determine confidence intervals of the results has been created and can be applied to gauge the accuracy of the analysis. In addition, sample size is less of an issue when multiple episode types are combined for a single metric.</p>	4c           H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/>
<p><b>F4. Data Collection Strategy</b>  <i>Describe what you have learned/modified as a result of testing regarding barriers to operational use of the measure (e.g., availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, cost of proprietary measures).</i></p> <p>The measure is in use beyond internal QI. Please see the section on Usability.</p>	4d           H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> I <input type="checkbox"/>
<p><b>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Feasibility</i>?</b></p>	
<p><b>Steering Committee: Overall, to what extent was the criterion, <i>Feasibility</i>, met?</b>  Rationale:</p>	H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/>
<p align="center"><b>RECOMMENDATION</b></p>	
<p><b>Steering Committee: Do you recommend for endorsement?</b>  Comments:</p>	Y <input type="checkbox"/> N <input type="checkbox"/> A <input type="checkbox"/>
<p align="center"><b>CONTACT INFORMATION</b></p>	
<p><b>Co.1 Measure Steward (Intellectual Property Owner)</b></p> <p><b>Co.1 Organization</b></p>	

<p>Ingenix, 950 Winter Street, suite 3800, Waltham, Massachusetts, 02451</p> <p><b>Co.2 Point of Contact</b></p> <p>Jennifer, Pearse, Jennifer_J_pearse@ingenix.om, 781-419-8628-</p>
<p>Measure Developer If different from Measure Steward</p> <p><b>Co.3 Organization</b></p> <p>Ingenix, 950 Winter Street, suite 3800, Waltham, Massachusetts, 02451</p> <p><b>Co.4 Point of Contact</b></p> <p>Dan, Dunn, Daniel.dunn@ingenixconsulting.com, 781-419-8425-</p>
<p><b>Co.5 Submitter If different from Measure Steward POC</b></p> <p>Jennifer, Pearse, Jennifer_J_pearse@ingenix.om, 781-419-8628-, Ingenix</p>
<p><b>Co.6 Additional organizations that sponsored/participated in measure development</b></p>
<p style="text-align: center;"><b>ADDITIONAL INFORMATION</b></p>
<p>Workgroup/Expert Panel involved in measure development</p> <p><b>Ad.1</b> Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.</p>
<p>Measure Developer/Steward Updates and Ongoing Maintenance</p> <p><b>Ad.2</b> Year the measure was first released:</p> <p><b>Ad.3</b> Month and Year of most recent revision:</p> <p><b>Ad.4</b> What is your frequency for review/update of this measure?</p> <p><b>Ad.5</b> When is the next scheduled review/update for this measure?</p>
<p><b>Ad.6</b> Copyright statement/disclaimers:</p> <p>Information submitted is confidential/proprietary to Ingenix, copyright 2011</p>
<p><b>Ad. 7</b> Date of Submission (MM/DD/YY):</p>

04/18/2011

## GENERAL METHODS DOCUMENT

### Building Episodes with Episode Treatment Groups (ETG) and Assessing Risk with Episode Risk Groups (ERG)

This document provides an overview of two Ingenix methodologies important to supporting resource use and cost of care measures. The first methodology, Episode Treatment Groups (ETG) groups individual medical and pharmacy services to unique episodes of care defining a condition for a patient. The second methodology, Episode Risk Groups (ERG) measures the relative health risk for an individual based on their mix of episodes of care. ETG is used extensively to support episode-based measurement of cost of care. ERG is employed in supporting population-based cost measurement, including the non-condition specific resources use measures included in this submission. The first section of this document describes ETG, followed by an overview of ERG.

### Episode Treatment Groups (ETG) Construction Logic

ETG is an episode grouping methodology that identifies a unique clinical condition for a patient and the services involved in diagnosing, managing and treating that condition. ETG organizes routinely-collected professional, inpatient, outpatient and ancillary services, including pharmaceutical services, into episodes of care. ETG evaluates each claim service record with respect to provider type, procedure and diagnoses codes and other information to assign the record to an appropriate episode. In doing this, all conditions and episodes are considered for a patient, including concurrently occurring conditions.

ETG covers the breadth of clinical medicine. Examples of ETG based conditions include diabetes, asthma and chronic sinusitis. Each episode is further assigned a condition-specific severity level, supporting case-mix adjusted comparisons within and across conditions.

ETG uses as input data information from administrative medical and pharmacy claim service records and encounters describing the individual services provided to a patient. ETG also uses information describing each patient, including age and gender and time enrolled with a health plan or other organization.

### The Episode Building Process

The ETG episode building process has four important steps:

1. Assign a Record Type to each service record, including the identification of Anchor Records
2. Build Episodes from Anchor Records
3. Group Ancillary Records to Episodes
4. Finalize the Episodes (determine if complete/incomplete; determine outlier status; assign severity, comorbidities, treatments and complicating factors to the episode)

#### Step 1: Assign Record Type

In building an episode the first step involves assigning a Record Type to each service record. The Record Type assigned to a record is determined by the Provider Type, Procedure Code and/or Revenue Code Service, and National Drug Code (NDC) (if any), on the record. Provider Type values are based on the mapping of individual provider specialties to one of three values recognized by ETG: Clinician, Facility and Other. The Provider Type values and their definitions are as follows:

Provider Type	Definition
Clinician	Providers who make diagnoses and recommend treatment
Facility	Acute and long term care providers such as short-term hospitals, skilled nursing facilities, and psychiatric or chemical dependency facilities

Other/Non-Clinician	All other healthcare providers
---------------------	--------------------------------

Service records including a NDC code are assigned a Pharmacy Record Type. For other services, ETG assigns one of the following Record Types to the service record using Provider Type and the procedure/revenue code:

Record Type	Record Type Value	Anchor or Non-Anchor
Management	A record submitted by a clinician for services related to the evaluation of a patient's condition.	Anchor
Surgery	A record submitted by a clinician for surgical or related procedures.	Anchor
Ancillary	A record submitted by any provider for laboratory, radiological or similar services.	Non-Anchor
Facility	A record submitted by a treatment facility for <b>room &amp; board</b> services.	Anchor
Pharmacy	A record for a prescription drug service.	Non-Anchor

Most management records contain evaluation and management CPT-4 codes. Surgery records are primarily procedural CPT-4 codes. Facility records are room and board revenue codes billed by a facility (also referred to as a confinement). Pharmacy records are claims containing a NDC or certain HCPCS codes related to the administration of a drug. Record Types of management, surgery and facility are considered *anchor* records. The identification of an anchor record is significant because it indicates that a clinician has evaluated a patient, and has decided on the types of services required to further identify and treat the patient's condition. Non-anchor records describe *ancillary* services that aid in evaluating and treating the patient, such as x-rays and laboratory services.

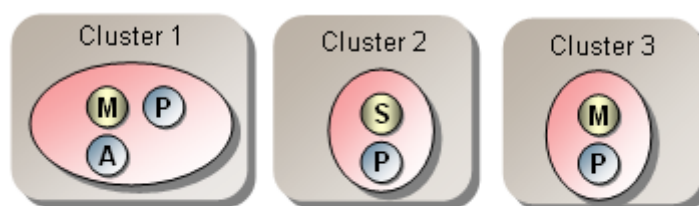
## Step 2: Build Episodes from Anchor Records

Only anchor records can start or continue an episode.

Anchor records can do the following:

- Begin a *cluster* that can open a new episode or join an existing episode
- Extend an episode (time-wise) – providing evidence that the episode has not yet completed
- Create one or more *phantom* clusters – when there are multiple diagnosis codes on the same anchor record
- Determine if episodes incur complications, comorbidities and significant surgery/treatment

Each anchor record forms a cluster. A cluster is the basic unit of an episode. Each cluster is comprised of an anchor record and zero, one, or more ancillary and pharmacy records. Each episode consists of one or more clusters. The illustration below demonstrates this concept, showing management (M), ancillary (A) and pharmacy (P) records within clusters.



Each cluster has only one anchor record

All records in a cluster have the same cluster number

The way in which records are grouped to an episode is governed mainly by the diagnosis, revenue, and procedure codes on the service record. Each ICD-9-CM, CPT-4/HCPCS, and revenue code has been mapped to ETG concepts through extensively vetted and continually updated clinical tables. (ICD-9 procedure codes are not used in grouping.)

## Diagnosis Codes

The software relies heavily on the diagnosis codes to help identify discrete episodes. The diagnosis identifies the condition being treated, which broadly translates to an ETG. Each diagnosis code is identified with a given diagnosis class. There are three diagnosis classes:

- **Specific:** These are ICD-9 diagnosis codes that indicate a specific disease. This code represents a disease or condition (as opposed to a sign or symptom) and is specific enough to be linked to a single ETG. ICD-9 Diagnosis code 250.40 (diabetes with renal manifestations) is a specific diagnosis code. It is primary to, and only eligible for, an episode of Diabetes.
- **Non-Specific:** These ICD-9 diagnosis codes represent a disease or condition (as opposed to a sign or symptom), but may not be specific enough to identify a single ETG. ICD-9 Diagnosis code 389.0 (conductive hearing loss) is a non-specific diagnosis code. It is primary to Hearing Disorders and incidental to several other conditions, such as Chronic Sinusitis.
- **Sign and Symptom:** These ICD-9 diagnosis codes represent signs and symptoms of disease as opposed to disease or condition. ICD-9 Diagnosis code 338.2 (chronic pain) is a sign & symptom diagnosis code. It is eligible for many ETGs due to its generic nature.

The software runs one member at a time and processes the anchor records with a 365-day moving window. The diagnosis codes are grouped in several distinct passes. This is done so that the grouper processes the more specific codes first, leaving the sign & symptom codes until later, when it is more likely that there is a more specific episode for these claims to join.

Each diagnosis code is matched with one or more ETG through a diagnosis eligibility table. The exception is 'E' codes which are not grouped. Each diagnosis code is further ranked, based on its strength of association with the ETG. The rank values are as follows: low, medium, high and primary. Low, medium, and high represent the strength of the match association. A primary rank describes conditions that define a disease and are the main codes that impact grouping decisions. The grouper first processes the specific and non-specific diagnosis codes so that concrete conditions/diseases are created. It then processes the sign and symptom diagnosis codes in reverse chronological order based on service dates to determine the best episode each of them can group to.

## Procedure/Revenue Codes

In building episodes, the procedure or revenue code can help to identify the ETG to which a particular claim record can be assigned. A given procedure may be valid for several ETGs, though not equally so. A procedure eligibility table therefore ranks the valid ETGs for each procedure to give a better sense of how closely related the service is to each ETG. The ranking options are: Very Low, Low, Medium, and High, with High being the strongest rank.

The following table provides an example of a rhinoplasty surgical procedure and selected ETGs it is eligible for and the rank for each ETG.

ETG	Rank
Trauma to ear/nose/throat	High
Other inflammatory conditions of ear/nose/throat	High
Allergic rhinitis	Medium
Chronic sinusitis	Medium
Trauma of oral cavity	Medium
Open fracture or dislocation - head & face	Medium
Congenital & acquired anomalies of ear/nose/throat	Medium
Closed fracture or dislocation - head & face	Low
Cocaine or amphetamine dependence	Very Low
Other disorders of ear/nose/throat	Very Low

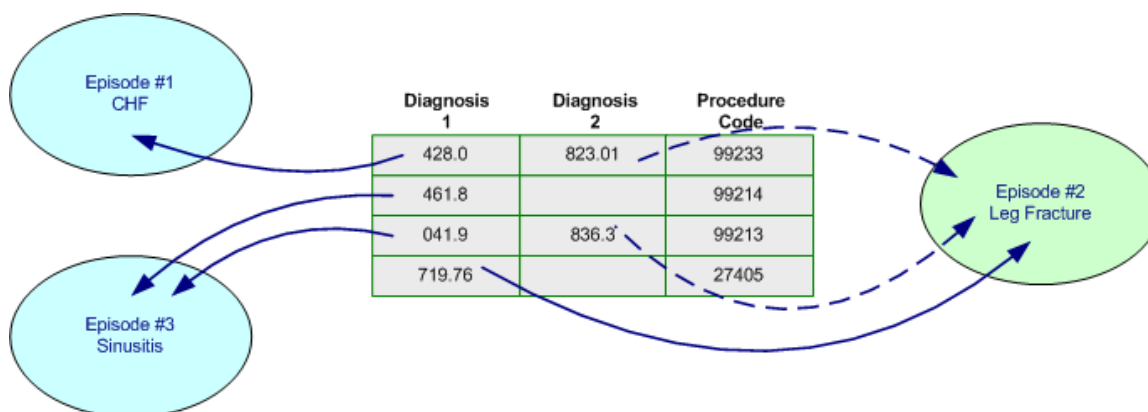
For a record to be eligible to start or join an episode, the diagnosis code and the procedure/revenue code must both be eligible for an ETG. Where an anchor record can be assigned to more than one observed

episode for a patient, the record is assigned to an episode according to the best combination of the procedure/revenue code and the diagnosis code.

- ❖ The ETG Online Clinical Knowledge Base application on the Ingenix website ([www.ingenix.com/transparency](http://www.ingenix.com/transparency)) provides more information about the diagnosis and procedure associations to an ETG.

## Clusters: Real and Phantom

Once the anchor record has been assigned to an episode using a diagnosis, the remaining diagnosis codes on the record, if any, are examined. If a remaining diagnosis would more appropriately belong to a different episode than the episode the anchor record is assigned to, the software starts a phantom cluster for a new episode. At this point, phantom clusters are episodes created that will not have any costs assigned to them. Subsequent service records for a patient will now have available additional episodes for potential grouping, so the software will be able to assign these subsequent services more accurately than it would without using phantoms. This allows the diagnostic information to be utilized fully to identify and track all of the conditions for which the member is being treated, yet still assign records to only one episode. The diagram below provides an illustration. The dotted line indicates a phantom episode was started, a straight line indicates a real episode was started. In the case of diagnosis code 719.76, it joined episode #2 which originated as a phantom episode, thereby converting it to a real episode.



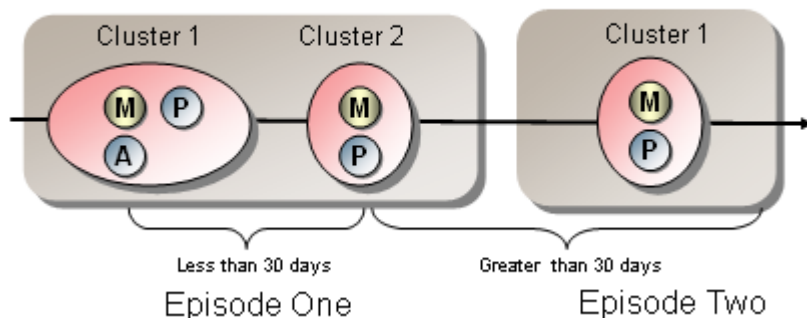
## Time Windows: Clean Periods and Member Eligibility

Along with the clinical aspects of starting and grouping records to an episode, the method of episode completion is a crucial feature of ETG. The approach taken for the identification of a complete episode relies on a flexible, rather than a fixed length of time. There are no standard definitions of an episode's chronological length. The episode grouper continues to identify and track all clinical activity for an episode for as long as a condition is actively treated – a concept described as discrete dynamic clean periods. A clean period is defined as the absence of treatment for a specified period of time. Each ETG has its own unique clean period. For an acute condition the concept of a clean period is of most importance. For example, the clean period for Acute Bronchitis is 30 days. Once an episode has started for this ETG, anchor records clinically consistent for acute bronchitis group to this episode until such time as 30 days passes without any corresponding clinically consistent treatment. For Chronic Bronchitis, the clean period is 180 days, consistent with a more chronic illness. In some obvious instances, e.g. benign hypertension or diabetes, there is no clean period. The condition is basically life-long (chronic) and all clinically consistent treatments group to an episode of benign hypertension for as long as data are available.

The clean period window is dynamic in that each new anchor record that joins an episode moves the clean period window by extending the episode's dates. In this way, as long as a condition is consistently treated such that the date of each successive anchor record is less than or equal to the clean period date for the ETG, the episode can last forever.

The following diagram provides an illustration of this concept for an acute condition.

A member has been identified as having Acute Bronchitis.  
The Clean Period for this ETG is 30 days.



In this example, two episodes of **Acute Bronchitis** are created.

- Three office visits occurred for the treatment of acute bronchitis (record type M)
- The time frame between the second office visit and the third office visit was greater than 30 days, the clean period of this ETG. Therefore, a second episode was created for this condition

If the example above had been for a chronic condition, such as benign hypertension, all services would be grouped into a single episode since chronic conditions do not necessarily have an end to their clean period. To allow for analysis on chronic conditions, we offer 5 options for users to parse the episode into annual increments:

1. User chooses any month to begin year long episodes
2. Year long episodes will start from the beginning of the grouped data
3. Year long episodes will start from the member's eligible start date
4. Year long episodes will end at the end of the grouped data
5. Year long episodes will end at the member's eligible end date

### Step 3: Group Ancillary Records

Non-anchor records represent services that are incidental to the direct evaluation, management and treatment of a patient. There are two types of non-anchor records: pharmacy records and ancillary records (such as laboratory tests, x-rays, and the facility component of ambulatory surgery centers services). Each non-anchor record links to only one cluster and eventually becomes part of the episode that the cluster is finally grouped to.

Ancillary records can do the following:

- Join an episode
- Convert a phantom episode into a real episode

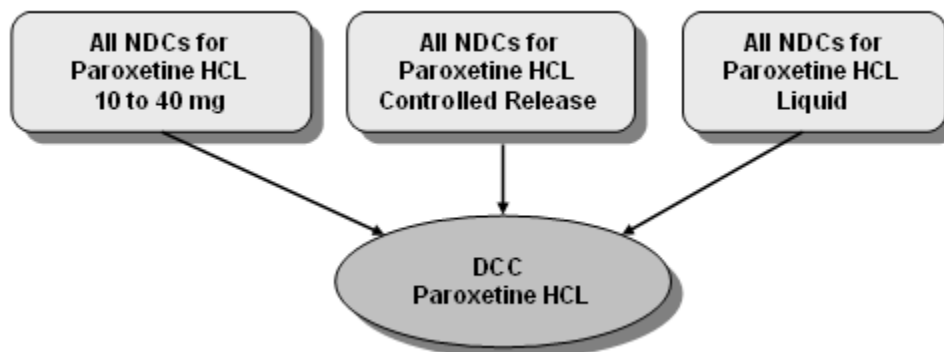
When the grouper assigns an ancillary record to an episode, it uses the ancillary record's diagnosis and procedure/revenue codes. It first evaluates diagnosis codes classified as *specific and nonspecific* to determine if these records can join an episode and then evaluates diagnosis codes classified as *sign and symptoms*. The ancillary record must occur within the clean period time window around an existing episode in order to be eligible to group to an existing episode. An ancillary record cannot extend an episode's length it can only join an episode.

It is possible for an ancillary claim record to be medically inappropriate for any episode or condition for a member. If an ancillary record is not eligible to join an open episode it is then evaluated to determine if it can be assigned to a preventive ETG (screening and immunizations). If an ancillary record cannot be assigned to a valid ETG or a preventive ETG, it is identified as an orphan record.

For drug records, the methodology evaluates each pharmacy record against the episodes for which the patient is being treated. The NDC code assigned to the pharmacy record provides the clinical information to support this evaluation. Just as with the procedure and diagnosis codes, a drug eligibility table identifies ETGs to which an NDC can be associated and the strength of that association (low, medium, high), allowing the grouper to assign the drug claim record to the most clinically appropriate episode. HCPCS Level II procedure codes which represent a drug and its administration (e.g., injectables) are also considered to be pharmacy records, and are grouped in the same way. Due to the large number of NDCs defined for pharmacy services, the ETG methodology uses a drug

classification hierarchy to support grouping. Each drug is associated with a Drug Classification Code (DCC) which represents a drug, or a specific dosage form of a drug. For example, the NDCs for all strengths of the antidepressant Paroxetine maps to the DCC of Paroxetine. The DCC concept assigned to the pharmacy services then supports grouping, not the NDC.

The following diagram illustrates this drug hierarchy.



Like ancillary records, drug records cannot extend an episode's length; they can only join an episode. A drug record must occur within an episode's clean period (pre and post) in order to be eligible to group to it.

#### Step 4: Finalize the Episode

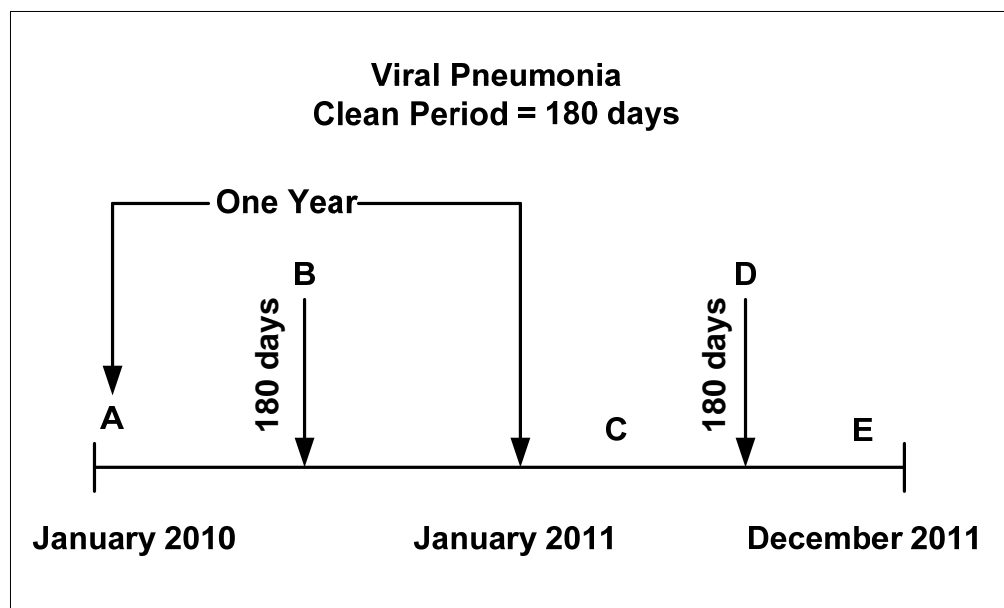
After all claim records have grouped to an episode, the grouper then has all of the information it needs to finalize the episode.

#### Episode Completeness

The notion of a complete episode is complex in the reality of service data. For example, assume the grouping start date is January 1, 2010. Does an episode for an acute condition with its first anchor record on January 3, 2010 begin with this claim or is the episode in progress? The episode of the acute condition might have begun sometime earlier (prior to January 1, 2010) but the data to identify the exact begin date are not available. The opposite is also true. With data available from January 1, 2009 through December 31, 2010, can it be known if a record incurred on December 21st for an existing episode is the end of the episode? The answer to both questions is that under certain circumstances it cannot be known whether a claim service record is actually the true beginning or the true end of an episode. A distinction must be made between episodes which are to be considered complete from those whose completeness cannot be determined.

A clean start is defined as a situation where the true beginning date for an episode is known. The ETG methodology identifies a clean start by comparing the incurred date of the first anchor record of an episode with the beginning date of the overall service data range used in the grouping (or a member's beginning eligibility date, if later), with the episode's ETG clean period. If that anchor record date starts after the number of pre-episode clean period days, the episode is considered to have a clean start. If it occurs within the clean period days, it is considered to have an unknown start. The same methodology is true for a clean finish. A clean finish uses the same number of clean period days to determine a known finish. If the last anchor record occurs prior to the clean period days, the episode is determined to have a clean finish. If the last anchor record occurs within the clean period days, it has an unknown finish.

The following diagram illustrates this concept. In this example, anchor records for this episode occur at dates A, B, C, D and E. Note that treatment for this episode spans well over one year.



Assume that the time frame from each anchor record to the next is less than 180 days.

- The anchor record at date A is an unknown start.
- The anchor records at dates B and C (if either were the first anchor records in this episode) represent a clean start.
- The anchor records at dates D and E (if either were the last anchor records in this episode) represent an unknown finish.

The Episode Type identifies the completeness of an episode. Each acute episode is assessed for its status as a full year episode, and if it has a clean start and/or a clean finish. The episode's start and end dates are compared against the clean period days. From this information, the Episode Type can be determined.

The following table identifies the episode type values and whether they are considered complete or incomplete.

Episode Type	Description	Completeness Status
0	Clean start, clean finish	Complete
1	Clean start, unknown finish (full year)	Complete
2	Unknown start, clean finish (full year)	Complete
3	Unknown start, unknown finish (full year)	Complete
4	Clean start, unknown finish	Incomplete
5	Unknown start, clean finish	Incomplete
6	Unknown start, unknown finish	Incomplete
7	Incomplete annual episode	Incomplete

To account for chronic conditions, the ETG methodology utilizes different logic than the clean/unknown starts and finishes approach described above. ETG does this since chronic conditions are life-long going forward. Further, to support proper episode-to-episode comparisons, the grouper limits the length of each episode for a chronic condition to one year. Such episodes which extend beyond one year and are subsequently limited to one year for analytical purposes are referred to as chronic annual episodes. As mentioned above, the grouper provides different configurable options on how to decide the starting point for chronic episodes: start month (a static month), grouping start date, grouping end date, eligibility start date and eligibility end date.

The grouper uses that selection and looks forward or back 365 days, collects all anchor records within that timeframe and assigns them to an episode. It does this in segments of 365 days. It then collects the non-anchor records and assigns them to the appropriate annual episode. To determine, within an annual year, if a chronic annual episode is considered complete, the grouper determines the member's enrollment during that time span: if the member is eligible for the entire year, that episode is considered complete (episode type 0); if not, the episode is considered incomplete (episode type 7).

The start date and end date for chronic annual episodes is based on the configurable selection made and is a full year date span. It does not reflect the date of the first and last anchor records within the episode, as acute episodes do.

### Assign Complications/Condition Status, Comorbidities and Treatments to Episodes

The ETG methodology also identifies complication, comorbidity and treatment factors observed for each episode. After core grouping, episodes are evaluated to determine if they have any complicating factors, if there are any comorbidities

associated with the episode's condition, and if the activity within the episode contains any treatment indicators. This information is reflected in the ETG number, allowing one to see specific characteristics of each episode. The first 6 digits are the base class, a unique number identifying the ETG; the 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> digits are the flags for with or without complication, with or without comorbidity and with or without treatments. The following table provides an illustration of the ETG numbers for Diabetes.

Base ETG	ETG Number	ETG Long Description
163000	163000000	Diabetes, w/o complication, w/o comorbidity, w/o surgery
163000	163000001	Diabetes, w/o complication, w/o comorbidity, with surgery
163000	163000010	Diabetes, w/o complication, with comorbidity, w/o surgery
163000	163000011	Diabetes, w/o complication, with comorbidity, with surgery
163000	163000100	Diabetes, with complication, w/o comorbidity, w/o surgery
163000	163000101	Diabetes, with complication, w/o comorbidity, with surgery
163000	163000110	Diabetes, with complication, with comorbidity, w/o surgery
163000	163000111	Diabetes, with complication, with comorbidity, with surgery

Identifying the condition status/complications for an episode provides specificity of the episode's clinical condition, any complications associated with the episode, and the disease progression, when applicable. The ETG methodology categorizes some diagnosis codes into groupings of similar diagnoses, referred to as condition status codes. For example, condition statuses for Diabetes include Diabetes Type 1 and Diabetes Type 2. Examples of condition statuses that specify complications of diabetes are Diabetic Coma and Diabetic Ketoacidosis.

Condition status codes are identified by diagnosis codes on anchor records, are ETG-specific and must occur within an episode in order for the episode to be designated as *with complication*. For example, the diagnosis of diabetic coma would not be a condition status code for an episode of chronic bronchitis. It would, however, be a condition status code for an episode of diabetes. In addition to flagging the ETG as *with complication*, the grouper provides an optional output that lists each condition status that was identified within an episode.

A comorbidity is defined as the presence of more than one disease or health condition in a member at a given time. The ETG methodology categorizes some diagnosis codes into groupings of similar diagnoses, referred to as comorbidity codes. For example, the comorbidity *Chronic bronchitis* is a compilation of the various diagnosis codes designated as such (e.g. Bronchiectasis, Chronic bronchitis NOS, etc.). The grouper identifies comorbidities by evaluating diagnosis codes on the records designated as anchor records. It keeps track of all of a member's comorbidities, gives each comorbidity an active period (approximately two years) and uses that information to determine what episodes can be labeled as *with comorbidity*.

Comorbidities are ETG-specific. For example, the comorbidity of Chronic Bronchitis would not be a comorbidity for an episode of Lymphoma. It would, however, be a comorbidity for an episode of Congestive Heart Failure. Any comorbidity that has an active period that occurs during an eligible episode's time frame is considered a comorbidity for that episode.

Treatment indicators are categorizations of services such as defining surgeries and active management procedures for malignant neoplasms (chemotherapy and radiation therapy services). These categories are a grouping of similar procedures. For example, the treatment indicator for Chemotherapy is a compilation of the procedure codes and revenue codes that are classified as chemotherapy services.

When flagging the ETG as *with or without surgery*, the ETG methodology provides more specificity for certain conditions. For malignant neoplasms, the grouper will also designate if an episode incurred active management services. For cardiology conditions, the grouper will also designate if an episode incurred these specific defining surgeries: angioplasty, CABG and valve surgery. The exact nature of the treatment will be specified by the value of the treatment indicator digit. The procedure and/or revenue codes categorized as a treatment indicator must occur within an episode in order for the episode to be flagged as such.

Given the ETG numbering scheme, where the first six digits define the base condition and the remaining digits describe treatment and other clinical factors, users of the ETG outputs have flexibility in how the grouped results are applied. For example, if the desire is to measure at the condition level, episodes are combined for analysis using the first six digits of the ETG number (the first six digits identify the base ETG). If the combination of

condition and the presence (or not) of a significant surgery are desired to support comparisons, users would combine episodes using the first six digits and the ninth digit of the ETG number. As described below, severity levels can also be used in addition to support comparisons.

### Severity Adjusting Episodes

Condition status factors, co-morbidities and patient demographics are used in determining the severity of an ETG episode. The ETG methodology takes advantage of the relevant condition status and co-morbidity factors when determining an episode's severity. In general, these factors indicate a higher risk patient who may require more extensive treatment for a condition. The result is a severity score and severity level for each episode. The higher the severity score, the more resources are expected relative to other condition episodes.

The condition status and co-morbidity factors found to have an impact on the required resources for condition episodes are included in the severity model. Each contributing factor to an episode is given a weight: a demographic weight (age & gender), condition status and co-morbidities weight, additional weights if there are interactions between multiple complications and interactions between multiple comorbidities (interaction weight), and weights for multiple complications and/or multiple comorbidities (multiple count weights). These weights are then summarized to generate an overall severity score for the episode.

A separate set of weights is computed for each ETG condition (e.g., Diabetes). There are separate age/gender weights for elderly (age 65 and older) and non-elderly weights.

After condition statuses and comorbidities have been assigned to an episode, the ETG methodology can determine the severity score and severity level for each episode. Each contributing factor to an episode is given a weight: a demographic weight (age & gender), condition status and comorbidities weight, additional weights if there are interactions between multiple complications and interactions between multiple comorbidities (interaction weight), and weights for multiple complications and/or multiple comorbidities (multiple count weights). These weights are then summarized to generate an overall severity score for the episode.

Based on the severity score, the severity level indicates a ranking of where the specific episode is relative to the population of all episodes within that base ETG. There are four potential severity levels, where the value 1 indicates a less severe episode and the value 4 indicates the most severe episode. Not all ETGs are severity adjusted and not all ETGs have 4 severity levels. All episodes for ETGs that are not severity adjusted have a severity score of 1.00 and a severity level of 1.

## Episode Risk Groups (ERG) Construction Logic

ERGs describe the relative health risk for a member in terms of current or future health care expenditures. ERG uses the episodes of care created by ETG as building blocks, including what condition episodes are observed and their severity. The nature and mix of episodes provide a clinical profile for a member that can serve as a marker of their current and future need for medical care. The ERG grouper produces two clinically-based risk scores: a retrospective risk score and a prospective risk score. Retrospective risk assessment uses risk markers for a member for a base year to produce a measure of risk for the same year. Prospective risk assessment uses risk markers for a base year to measure risk for a future year.

A high-level overview of the ERG logic is as follows:

1. Translate ETGs into ERGs
2. Generate ERG Profile (a member's demographic characteristics and observed mix of ERG)
3. Calculate ERG Risk Score

### Step 1: Translate ETGs into ERGs

The results from an ETG grouping of 12 months of medical and pharmacy services provide the inputs for ERGs. In particular, service records that have been grouped into ETGs for a single year are used as the condition identifiers for the member. The ETG base class and the Severity Level assigned to each claim record are elements used to associate an ETG to an ERG. Base ETG and Severity Level play an important role in assigning ERGs to an individual. As a rule, ERGs are not differentiated using a treatment indicator. However, the active management status of malignant neoplasm ETGs (triggered by the presence of radiation therapy or chemotherapy) is the exception. ERG assignment is not dependent on episode completion status or outlier status. ERG assignment does not vary with the number of episodes or ETGs observed for a member within the same ERG. Members with single or multiple episodes within an ERG receive identical assignments.

The following table provides an example of how the ETG values for Diabetes are translated into an ERG. The Base ETGs (163000 for Diabetes and 901300 for Diabetes Rx Agents, e.g., insulin) describe the observed condition. The Severity Level denotes the level of episode severity, with greater severity indicating a higher level of expected resources required. The different combinations of ETG and severity level trigger an ERG marker. Note that hierarchies are applied to ensure that only one ERG marker from a related clinical family is triggered. The hierarchy below is 0202 (for Diabetes), with a Priority value for each Base ETG and Severity Level. The lower value indicates a higher ranked Priority. Only the Base ETG and Severity Level combination with the lowest value for Priority is retained if more than one combination in the Hierarchy is observed.

Base ETG	Severity Level	ERG	Hierarchy	Priority	ERG Description
163000	1	02.021	0202	03	Diabetes, w/o significant complication/comorbidity
163000	2	02.022	0202	02	Diabetes, with significant complication/comorbidity, I
163000	3	02.022	0202	02	Diabetes, with significant complication/comorbidity, I
163000	4	02.023	0202	01	Diabetes, with significant complication/comorbidity, II
901300	0	02.021	0202	97	Diabetes, w/o significant complication/comorbidity

In summary, an individual's ETG episodes and their severity determine their ERGs. Hierarchies are employed to ensure only the most significant episode in the hierarchy is used to trigger an ERG. With the exception of malignant neoplasm ETGs, medical treatments observed within the episode are not used in determining an individual's ERGs.

The attachment "S5\_Code\_Table\_POP" and tab "ERG-ETG List" include the entire mapping and hierarchies used to translate ETGs into ERGs.

### Step 2: Generate ERG Profile

A member's age, gender and mix of ERGs are used to create their ERG profile. Every member is assigned to an age-sex group, using ten age groups: 0-5, 6-11, 12-18, 19-34, 35-44, 45-54, 55-64, 65-74, 75-84 and greater than

84. Members without claims will have no episodes and no ERGs. For these members, risk is based solely on age and gender. Members with claims are assigned to one or more ERGs depending on their mix of episodes of care.

### ERG Timing

The ERG models were developed using up to 12 months of data to measure relative health risk for the same 12 month prediction period (retrospective risk) or a future 12 month prediction period (prospective risk).

ERG uses ETG assignments for medical and pharmacy services in the latest 12 month period of the ETG grouping. This 12 month period is called the experience period—the period of time during which markers of member health risk are collected and used to measure retrospective and prospective risk. If more than 12 months of claims are grouped, ERG only uses the most recent 12 months of data.

### Step 3: Calculate ERG Risk

Calculating risk involves the assignment of a weight to each ERG and demographic marker of risk. These weights describe the contribution to risk of being in a specific age-sex group or having a particular medical condition included in an ERG. The model of risk can be defined generally as:

$$\text{RiskP}_i = \sum a_s * \text{AGESEX}_{i,s} + \sum b_e * \text{ERG}_{i,e}$$

$$\text{RiskR}_i = \sum c_e * \text{ERG}_{i,e}$$

where  $\text{RiskP}_i$  and  $\text{RiskR}_i$  are the ERG prospective and retrospective risk scores for person  $i$ ;  $\text{AGESEX}_{i,s}$  and  $\text{ERG}_{i,e}$  indicate their age-sex group ( $s$ ); and ERG assignments ( $e$ ), and the  $a$ 's,  $b$ 's and  $c$ 's are the risk weights. The age-sex and ERG markers are set to 1 if the marker is observed for an individual, 0 if not. Each member has their own profile of age-sex and ERGs. However, for each ERG model, the risk weights are pre-defined and are the same for all individuals. A person's risk score is the sum of these risk weights for each marker observed.

The ERG development data were obtained from the Ingenix Impact National Database, which includes information from over 40 health plans in nine different geographic census regions. The risk weights for Episode Risk Groups (and the pure age-gender model) were created using multiple linear regression and recent enrollment and medical and pharmacy claims data. The risk weights represent the relative costs per member per month (PMPM) associated with being in a specific age-gender group or having a particular medical condition included in an ERG.

### Input Data/Model Outcome

The weights associated with the ERG risk markers vary depending on both the availability of data for use as input and the services to be included in predicted risk. A population which has been grouped with pharmacy data included will likely produce a somewhat different portrait of risk than the same population without pharmacy data. To obtain the most precise measures of risk, ERG offers 2 model options (medical or medical and pharmacy) depending on whether pharmacy claims are available for a given member. The ERG risk markers included in these model options are identical, however the ERG risk weights differ according to which model option is selected. In most applications of ERG, the risk associated with the cost of all health care services, including both medical and pharmacy services is desired. However, in some applications predicting risk for only medical services may be important. To support this flexibility, ERG also offers options related to the risk outcome: medical and pharmacy services, or medical services only.

### Expenditure Thresholds

Expenditure threshold describes the level at which a higher-cost member's annual expenditures might be truncated for an application (truncation refers to capping a member's annual costs at some level prior to analysis). ERG offers three options for annual member threshold levels: \$25,000, \$100,000, and \$250,000. As with the other model options described above, the ERG risk markers included in threshold options are identical, however the ERG risk weights differ. In particular, the risk weights for the three options were derived using different threshold assumptions for the members included in the database used for developing the models. The selection of the expenditure threshold to use in the assessment of relative resource use depends on the application. As a default, most applications of resource use measurement for the submitted measures employ the \$100,000 threshold model.

## Length of Enrollment

A member's length of enrollment may affect the number and mix of episodes of care observed. This will ultimately affect the ERG risk markers assigned and risk scores generated by the ERG models. Partial enrollment reflects the number of days a member was enrolled during the experience period and a risk weight assignment for the ERG array is based on that length of time. All ERG models utilize partial enrollment to determine the weights used in computing risk.

With this approach, ERG will apply 1 of 4 separate sets of risk weights that correspond with the member's length of enrollment during the 12-month experience period. The enrollment periods are categorized as follows:

Enrollment Period	Days
1-3 months	1-91
4-6 months	92-183
7-9 months	184-274
10-12 months	275-365/366

Risk will also be impacted by whether the member is an elderly or non-elderly individual, due to the different implications of a disease or comorbidity on the overall level of risk for these members. Empirical testing during ERG development supported this premise. As a result, separate sets of ERG weights are used for individuals under 65 than for those aged 65 or greater. Although different weights are used, the same set of risk markers are employed for elderly and non-elderly individuals.

The input data, model outcome, and expenditure threshold data elements are supplied in the member demographics data as input into ERG. The length of enrollment is determined during ERG processing, using the supplied member eligibility dates.

## ERG Risk Models and Features

ERG provides significant flexibility for supporting a variety of business applications. The table below identifies each risk model and describes the model's timing, threshold levels, Input/Output options and business uses. As a guideline, the retrospective ERG risk model, \$100,000 threshold, is used to support the risk adjustment for the submitted measures. The "Medical/Medical-RX" model weightings are applied for individuals without a pharmacy benefit or without general pharmacy data availability. The "Medical-RX/Medical-RX" model weightings are applied for individuals with a pharmacy benefit/with general pharmacy data availability.

ERG Risk Model	Timing	Thresholds	Input/Output	Business Applications
Prospective Risk Model	12-0-12	25,000 100,000 250,000	Medical/Medical -RX Medical-RX/ Medical-RX	Predicting risk that begins immediately after the claims experience period. Setting payment rates and for risk stratification to support care intervention and disease management.
Retrospective	12	25,000 100,000 250,000	Medical/Medical -RX Medical-RX/Medical-RX	Producing risk for the claims experience period. Comparisons of provider and health plan performance such as physician profiling.

The following table shows a simplistic example of how ERG risk scores are computed for a single member.

ETG	ETG Severity Level	ERG	ERG Description	Retrospective Risk Weight	Prospective Risk Weight
438800 (Asthma)	1	10.041	Asthma, chronic obstructive pulmonary disease, I	0.1537	0.1967
473100 (Infection of stomach & esophagus)	2	01.011	Lower cost infectious diseases	0.0574	0.0372
			Females, 12 to 18	N/A	0.1569
<b>Total Risk Score</b>				<b>0.4078</b>	<b>0.3908</b>

This example describes a female, age 14, observed to have two unique episodes of care, covering two ETGs: asthma and infection of stomach & esophagus. These ETGs map to two unique ERGs. The member's age, gender and ERGs describe the profile of risk. The sum of the weights assigned to these risk markers provides the overall risk scores.

NQF Resource Use Measure submission							
For question S5- Data Dictionary/Code Tables							
The content contained in this document is proprietary and confidential							
Measure	Non-Condition Specific (Population)						
This table describes the relationships between ETGs and the associated ERG weights. Please also refer the general overview of ETG and ERG referenced in S2. Note that Treatment values are used for malignant neoplasm episodes to determine an ERG assignment. The values of 0 and 1 (w/o surgery and w/surgery) are categorized as "without active management" while the values of 2 and 3 (chemotherapy and radiation therapy) are categorized as "with active management". With active management episodes are used to indicate a more advanced stage of cancer and are mapped to a higher risk-weighted ERG.						As an example of how the ETG values are translated into an ERG. The Base ETGs for Diabetes (163000 for Diabetes and 901300 for Diabetes Rx Agents, e.g., insulin) describe the observed condition. The Severity Level denote the level of episode severity, with greater severity indicating a higher level of expected resources required (ETG defines 4 levels of severity for Diabetes). The different combinations of ETG and severity level trigger an ERG marker. Note that hierarchies are applied to ensure that only one ERG marker from a related clinical family is triggered. One of these hierarchies is 0202 (for Diabetes) and is defined by assigning a Priority value for each Base ETG and Severity Level in the hierarchy. A lower value indicates a higher ranked Priority. Only the Base ETG and Severity Level combination with the lowest value for Priority is retained if more than one episode with a combination in the Hierarchy is observed.	
ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
130100		1	01.041	0101	03	AIDS	AIDS/HIV, I
130100		2	01.043	0101	01	AIDS	AIDS/HIV, with significant complication/comorbidity
130100		3	01.043	0101	01	AIDS	AIDS/HIV, with significant complication/comorbidity
130200		1	01.042	0101	04	HIV sero-positive w/o AIDS	AIDS/HIV, II
130400		1	01.033	0102	02	Septicemia	Non-HIV major infectious diseases, III
130400		2	01.036	0102	01	Septicemia	Non-HIV major infectious diseases, with significant complication/comorbidity
130400		3	01.036	0102	01	Septicemia	Non-HIV major infectious diseases, with significant complication/comorbidity
130600		1	01.011	0101	10	Other infectious diseases	Lower cost infectious diseases
130600		2	01.011	0101	10	Other infectious diseases	Lower cost infectious diseases
130600		3	01.021	0101	09	Other infectious diseases	Other moderate cost infectious diseases
130600		4	01.032	0101	06	Other infectious diseases	Non-HIV major infectious diseases, II
130800		1	01.031	0101	08	Immunodeficiencies	Non-HIV major infectious diseases, I
130800		2	01.031	0101	06	Immunodeficiencies	Non-HIV major infectious diseases, I
130800		3	01.035	0101	05	Immunodeficiencies	Non-HIV major infectious diseases, V
139900		1	01.011	all		Infectious diseases signs & symptoms	Lower cost infectious diseases
162000		1	02.051	0209	01	Lipidoses (Gauchers Disease, Fabry Disease, Mucopolipidosis I-III)	Other higher cost endocrinology, I
162100		1	02.011	0201	03	Hyper-functioning thyroid gland	Lower cost endocrinology, I
162200		1	02.011	0201	03	Hypo-functioning thyroid gland	Lower cost endocrinology, I
162300		1	02.011	ign		Non-toxic goiter	Lower cost endocrinology, I
162400	0	1	02.041	0201	02	Malignant neoplasm of thyroid gland	Other moderate cost endocrinology
162400	1	1	02.041	0201	02	Malignant neoplasm of thyroid gland	Other moderate cost endocrinology
162400	2	1	02.071	0201	01	Malignant neoplasm of thyroid gland	Malignant neoplasm, thyroid & parathyroid, with active mgmt
162400	3	1	02.071	0201	01	Malignant neoplasm of thyroid gland	Malignant neoplasm, thyroid & parathyroid, with active mgmt
162500		1	02.011	0201	03	Non-malignant neoplasm of thyroid gland	Lower cost endocrinology, I
162600		1	02.011	0201	03	Other diseases of thyroid gland	Lower cost endocrinology, I
163000		1	02.021	0202	03	Diabetes	Diabetes, w/o significant complication/comorbidity
163000		2	02.022	0202	02	Diabetes	Diabetes, with significant complication/comorbidity, I
163000		3	02.022	0202	02	Diabetes	Diabetes, with significant complication/comorbidity, I
163000		4	02.023	0202	01	Diabetes	Diabetes, with significant complication/comorbidity, II
901300		0	02.021	0202	97	Ongoing Rx Tx wo Prov intervention - Diabetes mellitus treatment	Diabetes, w/o significant complication/comorbidity
163100	0	1	02.053	0203	02	Malignant neoplasm of pancreatic gland	Other higher cost endocrinology, III
163100	1	1	02.053	0203	02	Malignant neoplasm of pancreatic gland	Other higher cost endocrinology, III
163100	2	1	02.061	0203	01	Malignant neoplasm of pancreatic gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163100	3	1	02.061	0203	01	Malignant neoplasm of pancreatic gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163200		1	02.011	0203	04	Non-malignant neoplasm of pancreas	Lower cost endocrinology, I
163300	0	1	02.051	0204	02	Malignant neoplasm of pituitary gland	Other higher cost endocrinology, I
163300	1	1	02.051	0204	02	Malignant neoplasm of pituitary gland	Other higher cost endocrinology, I
163300	2	1	02.061	0204	01	Malignant neoplasm of pituitary gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163300	3	1	02.061	0204	01	Malignant neoplasm of pituitary gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163400		1	02.041	0204	05	Non-malignant neoplasm of pituitary gland	Other moderate cost endocrinology
163400		2	02.052	0204	04	Non-malignant neoplasm of pituitary gland	Other higher cost endocrinology, II
163400		3	02.053	0204	03	Non-malignant neoplasm of pituitary gland	Other higher cost endocrinology, III
163500		1	02.041	0205	03	Hyper-functioning adrenal gland	Other moderate cost endocrinology
163600		1	02.012	0205	04	Hypo-functioning adrenal gland	Lower cost endocrinology, II
163700	0	1	02.051	0205	02	Malignant neoplasm of adrenal gland	Other higher cost endocrinology, I
163700	1	1	02.051	0205	02	Malignant neoplasm of adrenal gland	Other higher cost endocrinology, I
163700	2	1	02.061	0205	01	Malignant neoplasm of adrenal gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163700	3	1	02.061	0205	01	Malignant neoplasm of adrenal gland	Malignant neoplasm, pancreas/pituitary/adrenal, with active mgmt
163800		1	02.041	0205	03	Non-malignant neoplasm of adrenal gland	Other moderate cost endocrinology

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
163900		1	02.041	0206	03	Hyper-functioning parathyroid gland	Other moderate cost endocrinology
164000		1	02.041	0206	03	Hypo-functioning parathyroid gland	Other moderate cost endocrinology
164100	0	1	02.051	0206	02	Malignant neoplasm of parathyroid gland	Other higher cost endocrinology, I
164100	1	1	02.051	0206	02	Malignant neoplasm of parathyroid gland	Other higher cost endocrinology, I
164100	2	1	02.071	0206	01	Malignant neoplasm of parathyroid gland	Malignant neoplasm, thyroid & parathyroid, with active mgmt
164100	3	1	02.071	0206	01	Malignant neoplasm of parathyroid gland	Malignant neoplasm, thyroid & parathyroid, with active mgmt
164200		1	02.011	0206	04	Non-malignant neoplasm of parathyroid gland	Lower cost endocrinology, I
164300		1	02.011	0210	02	Female sex gland disorders	Lower cost endocrinology, I
164300		2	02.041	0210	01	Female sex gland disorders	Other moderate cost endocrinology
164400		1	02.011	0215	02	Male sex gland disorders	Lower cost endocrinology, I
164500		1	02.041	0211	02	Nutritional deficiency	Other moderate cost endocrinology
164500		2	02.052	0211	01	Nutritional deficiency	Other higher cost endocrinology, II
164600		1	02.011	ign		Gout	Lower cost endocrinology, I
164700		1	02.031	0209	02	Hyperlipidemia, other	Hyperlipidemia, excluding lipidoses
164800		1	02.011	0212	02	Obesity	Lower cost endocrinology, I
164800		2	02.041	0212	01	Obesity	Other moderate cost endocrinology
164900		1	02.011	0213	02	Dehydration	Lower cost endocrinology, I
164900		2	02.041	0213	01	Dehydration	Other moderate cost endocrinology
165100		1	02.011	0214	03	Other metabolic disorders	Lower cost endocrinology, I
165100		2	02.041	0214	02	Other metabolic disorders	Other moderate cost endocrinology
165100		3	02.052	0214	01	Other metabolic disorders	Other higher cost endocrinology, II
165200		1	02.053	ign		Cystic fibrosis	Other higher cost endocrinology, III
165300		1	02.041	ign		Other diseases of endocrine glands	Other moderate cost endocrinology
169900		1	02.011	all		Endocrine disease signs & symptoms	Lower cost endocrinology, I
206800		1	03.011	0302	02	Agranulocytosis	Lower cost hematology
206800		2	03.051	0302	01	Agranulocytosis	Other higher cost hematology
206800		3	03.051	0302	01	Agranulocytosis	Other higher cost hematology
206900		1	03.011	0303	03	Thrombocytopenia	Lower cost hematology
206900		2	03.022	0303	01	Thrombocytopenia	Other moderate cost hematology, II
206900		3	03.023	0303	02	Thrombocytopenia	Other moderate cost hematology, III
207000		1	03.041	ign		Hemophilia	Hemophilia
207200	0	1	03.031	0301	04	Leukemia	Neoplastic blood diseases & leukemia, I
207200	0	2	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	0	3	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	0	4	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	1	1	03.031	0301	04	Leukemia	Neoplastic blood diseases & leukemia, I
207200	1	2	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	1	3	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	1	4	03.032	0301	03	Leukemia	Neoplastic blood diseases & leukemia, II
207200	2	1	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	2	2	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	2	3	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	2	4	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	3	1	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	3	2	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	3	3	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207200	3	4	03.034	0301	01	Leukemia	Neoplastic blood diseases & leukemia, IV
207300	0	1	03.031	0301	04	Other malignancies of blood & lymphatic systems	Neoplastic blood diseases & leukemia, I
207300	1	1	03.031	0301	04	Other malignancies of blood & lymphatic systems	Neoplastic blood diseases & leukemia, I
207300	2	1	03.034	0301	01	Other malignancies of blood & lymphatic systems	Neoplastic blood diseases & leukemia, IV
207300	3	1	03.034	0301	01	Other malignancies of blood & lymphatic systems	Neoplastic blood diseases & leukemia, IV
207400		1	03.061	ign		Sickle-cell anemia	Sickle-cell anemia
207600		1	03.023	0304	02	Myelodysplastic syndromes	Other moderate cost hematology, III
207600		2	03.051	0304	01	Myelodysplastic syndromes	Other higher cost hematology
207800	0	1	03.031	0301	04	Lymphoma	Neoplastic blood diseases & leukemia, I
207800	1	1	03.031	0301	04	Lymphoma	Neoplastic blood diseases & leukemia, I
207800	2	1	03.033	0301	02	Lymphoma	Neoplastic blood diseases & leukemia, III
207800	3	1	03.033	0301	02	Lymphoma	Neoplastic blood diseases & leukemia, III
207900	0	1	03.032	0301	03	Multiple myeloma	Neoplastic blood diseases & leukemia, II
207900	1	1	03.032	0301	03	Multiple myeloma	Neoplastic blood diseases & leukemia, II
207900	2	1	03.034	0301	01	Multiple myeloma	Neoplastic blood diseases & leukemia, IV
207900	3	1	03.034	0301	01	Multiple myeloma	Neoplastic blood diseases & leukemia, IV
208000		1	03.021	0305	02	Anemia of chronic diseases	Other moderate cost hematology, I
208000		2	03.022	0305	01	Anemia of chronic diseases	Other moderate cost hematology, II

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
208200		1	03.011	0306	02	Iron deficiency anemia	Lower cost hematology
208200		2	03.021	0306	01	Iron deficiency anemia	Other moderate cost hematology, I
208200		3	03.021	0306	01	Iron deficiency anemia	Other moderate cost hematology, I
208900		1	03.011	0306	02	Other hematologic diseases	Lower cost hematology
209900		1	03.011	all		Hematology signs & symptoms	Lower cost hematology
238800		1	04.031	0401	06	Mood disorder, depressed	Mood disorder, depressed, w/o significant complication/comorbidity
238800		2	04.033	0401	04	Mood disorder, depressed	Mood disorder, depressed, with significant complication/comorbidity
238800		3	04.033	0401	04	Mood disorder, depressed	Mood disorder, depressed, with significant complication/comorbidity
238900		1	04.032	0401	05	Mood disorder, bipolar	Mood disorder, bipolar, w/o significant complication/comorbidity
238900		2	04.034	0401	03	Mood disorder, bipolar	Mood disorder, bipolar, with significant complication/comorbidity
238900		3	04.034	0401	03	Mood disorder, bipolar	Mood disorder, bipolar, with significant complication/comorbidity
239000		1	04.021	ign		Dementia	Other moderate cost psychiatry
239100		1	04.021	ign		Organic drug or metabolic disorders	Other moderate cost psychiatry
239200		1	04.042	ign		Autism & child psychoses	Child psychiatric disorders, II
239300		1	04.051	0401	02	Psychotic & schizophrenic disorders	Psychotic & schizophrenic disorders, w/o significant complication/comorbidity
239300		2	04.051	0401	02	Psychotic & schizophrenic disorders	Psychotic & schizophrenic disorders, w/o significant complication/comorbidity
239300		3	04.052	0401	01	Psychotic & schizophrenic disorders	Psychotic & schizophrenic disorders, with significant complication/comorbidity
239400		1	04.012	ign		Personality disorder	Lower cost psychiatry, II
239700		1	04.021	ign		Eating disorder	Other moderate cost psychiatry
239800		1	04.012	0401	08	Anxiety disorder or phobias	Lower cost psychiatry, II
239800		2	04.012	0401	08	Anxiety disorder or phobias	Lower cost psychiatry, II
239800		3	04.012	0401	08	Anxiety disorder or phobias	Lower cost psychiatry, II
240000		1	04.011	ign		Psychosexual disorder	Lower cost psychiatry, I
240100		1	04.041	ign		Attention deficit disorder	Child psychiatric disorders, I
240200		1	04.042	ign		Development disorder	Child psychiatric disorders, II
240300		1	04.012	ign		Somatoform disorder	Lower cost psychiatry, II
240400		1	04.021	ign		Mental retardation	Other moderate cost psychiatry
240400		2	04.021	ign		Mental retardation	Other moderate cost psychiatry
240600		1	04.012	0401	08	Other neuropsychological or behavioral disorders	Lower cost psychiatry, II
249900		1	04.011	all		Psychiatric diseases signs & symptoms	Lower cost psychiatry, I
271100		1	05.011	ign		Cocaine or amphetamine dependence	Lower cost substance abuse
271200		1	05.011	ign		Acute alcohol intoxication	Lower cost substance abuse
271400		1	05.021	ign		Alcohol dependence	Other moderate & higher cost substance abuse
271500		1	05.021	ign		Opioid or barbiturate dependence	Other moderate & higher cost substance abuse
271600		1	05.011	all		Other drug dependence	Lower cost substance abuse
314000		1	06.011	ign		Viral meningitis	Lower cost neurology
314100		1	06.041	ign		Bacterial & fungal meningitis	Other higher cost neurology, I
314200		1	06.031	ign		Viral encephalitis	Other moderate cost neurology, I
314300		1	06.041	ign		Nonviral encephalitis	Other higher cost neurology, I
314400		1	06.041	ign		Parasitic encephalitis	Other higher cost neurology, I
314500		1	06.011	ign		Toxic encephalitis	Lower cost neurology
314700		1	06.041	0604	01	Brain abscess	Other higher cost neurology, I
314800		1	06.041	0604	01	Spinal abscess	Other higher cost neurology, I
315000		1	06.032	ign		Inflammation of central nervous system, other	Other moderate cost neurology, II
315100		1	06.062	0601	02	Multiple sclerosis	Multiple sclerosis & ALS, II
315200		1	06.051	0608	02	Epilepsy	Epilepsy, I
315200		2	06.052	0608	01	Epilepsy	Epilepsy, II
315300	0	1	06.072	0602	01	Malignant central nervous system metastases	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315300	1	1	06.072	0602	01	Malignant central nervous system metastases	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315300	2	1	06.072	0602	01	Malignant central nervous system metastases	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315300	3	1	06.072	0602	01	Malignant central nervous system metastases	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	0	1	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	0	2	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	0	3	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	1	1	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	1	2	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	1	3	06.071	0602	02	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, w/o metastases, with active mgmt
315400	2	1	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	2	2	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	2	3	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	3	1	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	3	2	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315400	3	3	06.072	0602	01	Malignant neoplasm of central nervous system	Malignant neoplasm, central nervous system, with metastases, with active mgmt
315600		1	06.032	0602	03	Non-malignant neoplasm of central nervous system	Other moderate cost neurology, II

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
316000		1	06.031	0603	04	Cerebral vascular disease	Other moderate cost neurology, I
316000		2	06.032	0603	03	Cerebral vascular disease	Other moderate cost neurology, II
316000		3	06.042	0603	02	Cerebral vascular disease	Other higher cost neurology, II
316000		4	06.041	0603	01	Cerebral vascular disease	Other higher cost neurology, I
316300		1	06.011	0604	04	Brain trauma	Lower cost neurology
316300		2	06.031	0604	03	Brain trauma	Other moderate cost neurology, I
316400		1	06.032	0601	05	Alzheimer's disease	Other moderate cost neurology, II
316500		1	06.011	0604	04	Spinal trauma	Lower cost neurology
316500		2	06.032	0604	02	Spinal trauma	Other moderate cost neurology, II
316500		3	06.032	0604	02	Spinal trauma	Other moderate cost neurology, II
316600		1	06.062	0601	02	Amyotrophic lateral sclerosis	Multiple sclerosis & ALS, II
316700		1	06.031	0601	06	Hereditary & degenerative diseases of central nervous system, other	Other moderate cost neurology, I
316700		2	06.041	0601	03	Hereditary & degenerative diseases of central nervous system, other	Other higher cost neurology, I
316700		3	06.041	0601	03	Hereditary & degenerative diseases of central nervous system, other	Other higher cost neurology, I
316700		4	06.042	0601	01	Hereditary & degenerative diseases of central nervous system, other	Other higher cost neurology, II
316800		1	06.041	0601	03	Parkinson's disease	Other higher cost neurology, I
316900		1	06.021	0605	02	Migraine headache	Migraine headache, w/o significant complication/comorbidity
316900		2	06.021	0605	02	Migraine headache	Migraine headache, w/o significant complication/comorbidity
316900		3	06.022	0605	01	Migraine headache	Migraine headache, with significant complication/comorbidity
317100		1	06.031	0606	03	Congenital disorders of central nervous system	Other moderate cost neurology, I
317100		2	06.041	0606	02	Congenital disorders of central nervous system	Other higher cost neurology, I
317100		3	06.042	0606	01	Congenital disorders of central nervous system	Other higher cost neurology, II
317300		1	06.031	ign		Inflammation of cranial nerves	Other moderate cost neurology, I
317500		1	06.031	0607	02	Carpal tunnel syndrome	Other moderate cost neurology, I
317700		1	06.031	0607	02	Inflammation of non-cranial nerves, except carpal tunnel	Other moderate cost neurology, I
317700		2	06.041	0607	01	Inflammation of non-cranial nerves, except carpal tunnel	Other higher cost neurology, I
317900		1	06.031	ign		Peripheral nerve neoplasm	Other moderate cost neurology, I
318100		1	06.031	ign		Traumatic disorders of cranial nerves	Other moderate cost neurology, I
318300		1	06.031	ign		Traumatic disorders of non-cranial nerves	Other moderate cost neurology, I
318400		1	06.032	ign		Congenital disorders of peripheral nerves	Other moderate cost neurology, II
318600		1	06.032	ign		Other neurological diseases	Other moderate cost neurology, II
319900		1	06.011	all		Neurological diseases signs & symptoms	Lower cost neurology
350100		1	07.021	ign		Internal eye infection	Other moderate cost ophthalmology
350300		1	07.011	ign		External eye infection, except conjunctivitis	Lower cost ophthalmology
350400		1	07.011	ign		Conjunctivitis	Lower cost ophthalmology
350600		1	07.011	ign		Inflammatory eye disease	Lower cost ophthalmology
350800	0	1	07.061	0701	01	Malignant neoplasm of eye, internal	Malignant neoplasm, eye
350800	1	1	07.061	0701	01	Malignant neoplasm of eye, internal	Malignant neoplasm, eye
350800	2	1	07.061	0701	01	Malignant neoplasm of eye, internal	Malignant neoplasm, eye
350800	3	1	07.061	0701	01	Malignant neoplasm of eye, internal	Malignant neoplasm, eye
350900	0	1	07.061	0701	01	Malignant neoplasm of eye, external	Malignant neoplasm, eye
350900	1	1	07.061	0701	01	Malignant neoplasm of eye, external	Malignant neoplasm, eye
351000		1	07.011	0701	02	Non-malignant neoplasm of eye, internal	Lower cost ophthalmology
351100		1	07.011	0701	02	Non-malignant neoplasm of eye, external	Lower cost ophthalmology
351500		1	07.031	ign		Glaucoma	Glaucoma
351500		2	07.031	ign		Glaucoma	Glaucoma
351700		1	07.041	ign		Cataract	Cataract
351900		1	07.011	ign		Trauma of eye	Lower cost ophthalmology
352100		1	07.011	ign		Congenital anomaly of eye	Lower cost ophthalmology
352400		1	07.051	0704	01	Diabetic retinopathy	Diabetic retinopathy
352600		1	07.021	0704	02	Non-diabetic vascular retinopathy	Other moderate cost ophthalmology
352800		1	07.011	0704	03	Other vascular disorders of eye except retinopathies	Lower cost ophthalmology
353000		1	07.021	ign		Macular degeneration	Other moderate cost ophthalmology
353200		1	07.011	ign		Non-macular degeneration	Lower cost ophthalmology
353600		1	07.011	ign		Visual disturbances	Lower cost ophthalmology
353600		2	07.011	ign		Visual disturbances	Lower cost ophthalmology
353700		1	07.011	all		Other & unspecified diseases & disorders of eye & adnexa	Lower cost ophthalmology
385000		1	08.061	0801	01	Heart or heart/lung transplant	Heart and/or lung transplant
386500		1	08.041	0801	16	Ischemic heart disease	Ischemic heart disease, heart failure, cardiomyopathy, I
386500		2	08.042	0801	14	Ischemic heart disease	Ischemic heart disease, heart failure, cardiomyopathy, II
386500		3	08.044	0801	09	Ischemic heart disease	Ischemic heart disease, heart failure, cardiomyopathy, IV
386500		4	08.044	0801	04	Ischemic heart disease	Ischemic heart disease, heart failure, cardiomyopathy, IV
386600		1	08.071	ign		Pulmonary heart disease	Pulmonary heart disease
386800		1	08.043	0801	11	Congestive heart failure	Ischemic heart disease, heart failure, cardiomyopathy, III

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
386800		2	08.045	0801	07	Congestive heart failure	Ischemic heart disease, heart failure, cardiomyopathy, V
386800		3	08.046	0801	06	Congestive heart failure	Ischemic heart disease, heart failure, cardiomyopathy, VI
386800		4	08.046	0801	02	Congestive heart failure	Ischemic heart disease, heart failure, cardiomyopathy, VI
386900		1	08.042	0801	12	Cardiomyopathy	Ischemic heart disease, heart failure, cardiomyopathy, II
386900		2	08.043	0801	08	Cardiomyopathy	Ischemic heart disease, heart failure, cardiomyopathy, III
386900		3	08.045	0801	03	Cardiomyopathy	Ischemic heart disease, heart failure, cardiomyopathy, V
387000		1	08.021	0812	02	Aortic aneurysm	Other moderate cost cardiology, I
387000		2	08.031	0812	01	Aortic aneurysm	Other higher cost cardiology, I
387100		1	08.042	0801	10	Heart failure, diastolic	Ischemic heart disease, heart failure, cardiomyopathy, II
387100		2	08.046	0801	05	Heart failure, diastolic	Ischemic heart disease, heart failure, cardiomyopathy, VI
387200		1	08.021	0811	02	Cardiac infection	Other moderate cost cardiology, I
387200		2	08.031	0811	01	Cardiac infection	Other higher cost cardiology, I
387200		3	08.031	0811	01	Cardiac infection	Other higher cost cardiology, I
387400		1	08.012	0803	02	Valvular disorder	Lower cost cardiology, II
387400		2	08.012	0803	02	Valvular disorder	Lower cost cardiology, II
387400		3	08.021	0803	01	Valvular disorder	Other moderate cost cardiology, I
387400		4	08.021	0803	01	Valvular disorder	Other moderate cost cardiology, I
387500		1	08.021	ign		Severe ventricular rhythms	Other moderate cost cardiology, I
387600		1	08.021	ign		Severe heart block	Other moderate cost cardiology, I
387700		1	08.011	0804	02	Other conduction disorders	Lower cost cardiology, I
387700		2	08.021	0804	01	Other conduction disorders	Other moderate cost cardiology, I
387700		3	08.021	0804	01	Other conduction disorders	Other moderate cost cardiology, I
387800		1	08.021	0810	02	Atrial fibrillation & flutter	Other moderate cost cardiology, I
387800		2	08.021	0810	02	Atrial fibrillation & flutter	Other moderate cost cardiology, I
387800		3	08.022	0810	01	Atrial fibrillation & flutter	Other moderate cost cardiology, II
388100		1	08.051	0801	18	Hypertension	Hypertension, w/o complication/comorbidity
388100		2	08.051	0801	17	Hypertension	Hypertension, w/o complication/comorbidity
388100		3	08.052	0801	15	Hypertension	Hypertension, with complication/comorbidity
388100		4	08.053	0801	13	Hypertension	Hypertension, with significant complication/comorbidity
388300		1	08.021	0805	02	Cardiac congenital disorder	Other moderate cost cardiology, I
388300		2	08.021	0805	02	Cardiac congenital disorder	Other moderate cost cardiology, I
388300		3	08.032	0805	01	Cardiac congenital disorder	Other higher cost cardiology, II
388600		1	08.021	ign		Cardiac trauma	Other moderate cost cardiology, I
388700		1	08.021	ign		Other cardiac diseases	Other moderate cost cardiology, I
389000		1	08.021	0806	02	Arterial inflammation	Other moderate cost cardiology, I
389000		2	08.021	0806	02	Arterial inflammation	Other moderate cost cardiology, I
389000		3	08.031	0806	01	Arterial inflammation	Other higher cost cardiology, I
389200		1	08.022	ign		Arterial embolism/thrombosis	Other moderate cost cardiology, II
389500		1	08.021	0807	03	Non-cerebral, non-coronary atherosclerosis	Other moderate cost cardiology, I
389500		2	08.022	0807	02	Non-cerebral, non-coronary atherosclerosis	Other moderate cost cardiology, II
389500		3	08.032	0807	01	Non-cerebral, non-coronary atherosclerosis	Other higher cost cardiology, II
389700		1	08.022	ign		Arterial aneurysm, except aorta	Other moderate cost cardiology, II
389800		1	08.012	0808	02	Other non-inflammatory arterial diseases	Lower cost cardiology, II
389800		2	08.022	0808	01	Other non-inflammatory arterial diseases	Other moderate cost cardiology, II
390100		1	08.022	ign		Arterial trauma	Other moderate cost cardiology, II
390300		1	08.022	0809	02	Embolism & thrombosis of veins	Other moderate cost cardiology, II
390300		2	08.031	0809	01	Embolism & thrombosis of veins	Other higher cost cardiology, I
390400		1	08.021	ign		Disorders of lymphatic channels	Other moderate cost cardiology, I
390500		1	08.021	ign		Phlebitis & thrombophlebitis of veins	Other moderate cost cardiology, I
390600		1	08.012	ign		Varicose veins of lower extremity	Lower cost cardiology, II
390700		1	08.011	ign		Other minor inflammatory diseases of veins	Lower cost cardiology, I
390900		1	08.011	ign		Venous trauma	Lower cost cardiology, I
391000		1	08.021	ign		Other diseases of veins	Other moderate cost cardiology, I
399900		1	08.011	all		Cardiovascular diseases signs & symptoms	Lower cost cardiology, I
402000		1	09.012	ign		Infections of oral cavity	Lower cost ear/nose/throat, II
402200		1	09.012	ign		Inflammation of oral cavity	Lower cost ear/nose/throat, II
402400		1	09.012	ign		Trauma of oral cavity	Lower cost ear/nose/throat, II
402600		1	09.011	ign		Other diseases of oral cavity	Lower cost ear/nose/throat, I
402900		1	09.011	0904	02	Otitis media	Lower cost ear/nose/throat, I
402900		2	09.011	0904	02	Otitis media	Lower cost ear/nose/throat, I
402900		3	09.012	0904	01	Otitis media	Lower cost ear/nose/throat, II
403100		1	09.011	ign		Tonsillitis, adenoiditis or pharyngitis	Lower cost ear/nose/throat, I
403200		1	09.011	0903	03	Allergic rhinitis	Lower cost ear/nose/throat, I
403300		1	09.011	0903	03	Acute sinusitis	Lower cost ear/nose/throat, I

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
403500		1	09.012	0903	02	Chronic sinusitis	Lower cost ear/nose/throat, II
403500		2	09.021	0903	01	Chronic sinusitis	Other moderate cost ear/nose/throat
403500		3	09.021	0903	01	Chronic sinusitis	Other moderate cost ear/nose/throat
403700		1	09.011	0905	02	Other infections of ear/nose/throat	Lower cost ear/nose/throat, I
404100		1	09.011	0902	02	Other inflammatory conditions of ear/nose/throat	Lower cost ear/nose/throat, I
404100		2	09.021	0902	01	Other inflammatory conditions of ear/nose/throat	Other moderate cost ear/nose/throat
404300	0	1	09.031	0901	02	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, I
404300	0	2	09.031	0901	02	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, I
404300	1	1	09.031	0901	02	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, I
404300	1	2	09.031	0901	02	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, I
404300	2	1	09.032	0901	01	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, II
404300	2	2	09.032	0901	01	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, II
404300	3	1	09.032	0901	01	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, II
404300	3	2	09.032	0901	01	Malignant neoplasm of ear/nose/throat	Malignant neoplasm, ear/nose/throat, II
404500		1	09.021	0901	03	Non-malignant neoplasm of ear/nose/throat	Other moderate cost ear/nose/throat
404700		1	09.021	ign		Congenital & acquired anomalies of ear/nose/throat	Other moderate cost ear/nose/throat
404900		1	09.011	ign		Hearing disorders	Lower cost ear/nose/throat, I
405100		1	09.012	ign		Trauma to ear/nose/throat	Lower cost ear/nose/throat, II
405300		1	09.021	0905	01	Other disorders of ear/nose/throat	Other moderate cost ear/nose/throat
409900		1	09.011	all		Otolaryngology diseases signs & symptoms	Lower cost ear/nose/throat, I
437000		1	08.061	0801	01	Lung transplant	Heart and/or lung transplant
437200		1	10.011	1001	03	Viral pneumonia	Lower cost pulmonology, I
437200		2	10.012	1001	02	Viral pneumonia	Lower cost pulmonology, II
437200		3	10.021	1001	01	Viral pneumonia	Other moderate cost pulmonology
437400		1	10.011	1002	04	Bacterial lung infections	Lower cost pulmonology, I
437400		2	10.021	1002	03	Bacterial lung infections	Other moderate cost pulmonology
437400		3	10.061	1002	02	Bacterial lung infections	Other higher cost pulmonology, I
437400		4	10.062	1002	01	Bacterial lung infections	Other higher cost pulmonology, II
437600		1	10.021	1003	02	Fungal & other pneumonia	Other moderate cost pulmonology
437600		2	10.062	1003	01	Fungal & other pneumonia	Other higher cost pulmonology, II
437800		1	10.011	1004	02	Pulmonary tuberculosis	Lower cost pulmonology, I
437800		2	10.021	1004	01	Pulmonary tuberculosis	Other moderate cost pulmonology
437800		3	10.021	1004	01	Pulmonary tuberculosis	Other moderate cost pulmonology
438000		1	10.012	1006	03	Disseminated tuberculosis	Lower cost pulmonology, II
438000		2	10.021	1006	02	Disseminated tuberculosis	Other moderate cost pulmonology
438000		3	10.062	1006	01	Disseminated tuberculosis	Other higher cost pulmonology, II
438300		1	10.031	1005	06	Acute bronchitis	Acute bronchitis
438500		1	10.012	ign		Minor infectious pulmonary diseases, other than acute bronchitis	Lower cost pulmonology, II
438800		1	10.041	1005	05	Asthma	Asthma, chronic obstructive pulmonary disease, I
438800		2	10.042	1005	03	Asthma	Asthma, chronic obstructive pulmonary disease, II
438800		3	10.042	1005	03	Asthma	Asthma, chronic obstructive pulmonary disease, II
438800		4	10.043	1005	02	Asthma	Asthma, chronic obstructive pulmonary disease, III
439300		1	10.042	1005	03	Chronic obstructive pulmonary disease	Asthma, chronic obstructive pulmonary disease, II
439300		2	10.043	1005	02	Chronic obstructive pulmonary disease	Asthma, chronic obstructive pulmonary disease, III
439300		3	10.043	1005	02	Chronic obstructive pulmonary disease	Asthma, chronic obstructive pulmonary disease, III
439300		4	10.044	1005	01	Chronic obstructive pulmonary disease	Asthma, chronic obstructive pulmonary disease, IV
439700		1	10.021	1007	03	Occupational & environmental pulmonary diseases	Other moderate cost pulmonology
439700		2	10.061	1007	02	Occupational & environmental pulmonary diseases	Other higher cost pulmonology, I
439700		3	10.062	1007	01	Occupational & environmental pulmonary diseases	Other higher cost pulmonology, II
439800		1	10.021	ign		Other inflammatory lung diseases	Other moderate cost pulmonology
440000	0	1	10.052	1008	02	Malignant lung metastases	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440000	1	1	10.052	1008	02	Malignant lung metastases	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440000	2	1	10.053	1008	01	Malignant lung metastases	Malignant neoplasm, pulmonary, with active mgmt
440000	3	1	10.053	1008	01	Malignant lung metastases	Malignant neoplasm, pulmonary, with active mgmt
440100	0	1	10.051	1008	03	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, w/o significant complication/comorbidity
440100	0	2	10.052	1008	02	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440100	0	3	10.052	1008	02	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440100	1	1	10.051	1008	03	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440100	1	2	10.052	1008	02	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440100	1	3	10.052	1008	02	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, w/o active mgmt, with significant complication/comorbidity
440100	2	1	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt
440100	2	2	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt
440100	2	3	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt
440100	3	1	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
440100	3	2	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt
440100	3	3	10.053	1008	01	Malignant neoplasm of pulmonary system	Malignant neoplasm, pulmonary, with active mgmt
440300		1	10.061	1008	04	Non-malignant neoplasm of pulmonary system	Other higher cost pulmonology, I
440400		1	10.012	ign		Chest trauma, open	Lower cost pulmonology, II
440600		1	10.012	ign		Chest trauma, closed	Lower cost pulmonology, II
440800		1	10.061	ign		Pulmonary congenital anomalies	Other higher cost pulmonology, I
441000		1	10.061	ign		Pulmonary embolism	Other higher cost pulmonology, I
441200		1	10.061	ign		Acute respiratory distress syndrome	Other higher cost pulmonology, I
441500		1	10.012	ign		Other pulmonary disorders	Lower cost pulmonology, II
449900		1	10.012	all		Pulmonology diseases signs & symptoms	Lower cost pulmonology, II
473100		1	11.011	1102	02	Infection of stomach & esophagus	Lower cost gastroenterology, I
473100		2	11.011	1102	02	Infection of stomach & esophagus	Lower cost gastroenterology, I
473100		3	11.013	1102	01	Infection of stomach & esophagus	Lower cost gastroenterology, III
473300		1	11.013	1103	02	Inflammation of esophagus	Lower cost gastroenterology, III
473300		2	11.013	1103	02	Inflammation of esophagus	Lower cost gastroenterology, III
473300		3	11.021	1103	01	Inflammation of esophagus	Other moderate cost gastroenterology, I
473500		1	11.011	1104	03	Gastritis &/or duodenitis	Lower cost gastroenterology, I
473500		2	11.013	1104	02	Gastritis &/or duodenitis	Lower cost gastroenterology, III
473500		3	11.021	1104	01	Gastritis &/or duodenitis	Other moderate cost gastroenterology, I
473800		1	11.013	1105	02	Ulcer	Lower cost gastroenterology, III
473800		2	11.013	1105	02	Ulcer	Lower cost gastroenterology, III
473800		3	11.022	1105	01	Ulcer	Other moderate cost gastroenterology, II
474000	0	1	11.052	1101	03	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, II
474000	0	2	11.052	1101	03	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, II
474000	1	1	11.052	1101	03	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, II
474000	1	2	11.052	1101	03	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, II
474000	2	1	11.053	1101	02	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, III
474000	2	2	11.054	1101	01	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, IV
474000	3	1	11.053	1101	02	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, III
474000	3	2	11.054	1101	01	Malignant neoplasm of stomach & esophagus	Malignant neoplasm, gastroenterology, IV
474200		1	11.013	1101	05	Non-malignant neoplasm of stomach & esophagus	Lower cost gastroenterology, III
474400		1	11.012	ign		Trauma of stomach or esophagus	Lower cost gastroenterology, II
474500		1	11.021	ign		Anomaly of stomach or esophagus	Other moderate cost gastroenterology, I
474700		1	11.061	ign		Appendicitis	Appendicitis
474900		1	11.011	1106	04	Diverticulitis & diverticulosis	Lower cost gastroenterology, I
474900		2	11.012	1106	03	Diverticulitis & diverticulosis	Lower cost gastroenterology, II
474900		3	11.013	1106	02	Diverticulitis & diverticulosis	Lower cost gastroenterology, III
474900		4	11.022	1106	01	Diverticulitis & diverticulosis	Other moderate cost gastroenterology, II
475000		1	11.011	ign		Other infectious diseases of intestines & abdomen	Lower cost gastroenterology, I
475200		1	11.022	1107	02	Other inflammation of intestines & abdomen	Other moderate cost gastroenterology, II
475200		2	11.042	1107	01	Other inflammation of intestines & abdomen	Other higher cost gastroenterology, II
475300		1	11.021	1108	02	Inflammatory bowel disease	Other moderate cost gastroenterology, I
475300		2	11.041	1108	01	Inflammatory bowel disease	Other higher cost gastroenterology, I
475300		3	11.041	1108	01	Inflammatory bowel disease	Other higher cost gastroenterology, I
475400	0	1	11.051	1101	04	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, I
475400	0	2	11.052	1101	03	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, II
475400	0	3	11.053	1101	02	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, III
475400	1	1	11.051	1101	04	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, I
475400	1	2	11.052	1101	03	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, II
475400	1	3	11.053	1101	02	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, III
475400	2	1	11.053	1101	02	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, III
475400	2	2	11.054	1101	01	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, IV
475400	2	3	11.054	1101	01	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, IV
475400	3	1	11.053	1101	02	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, III
475400	3	2	11.054	1101	01	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, IV
475400	3	3	11.054	1101	01	Malignant neoplasm of large intestine	Malignant neoplasm, gastroenterology, IV
475500	0	1	11.052	1101	03	Malignant neoplasm of small intestine & abdomen	Malignant neoplasm, gastroenterology, II
475500	1	1	11.052	1101	03	Malignant neoplasm of small intestine & abdomen	Malignant neoplasm, gastroenterology, II
475500	2	1	11.053	1101	02	Malignant neoplasm of small intestine & abdomen	Malignant neoplasm, gastroenterology, III
475500	3	1	11.053	1101	02	Malignant neoplasm of small intestine & abdomen	Malignant neoplasm, gastroenterology, III
475600		1	11.011	1101	06	Non-malignant neoplasm of intestines & abdomen	Lower cost gastroenterology, I
475600		2	11.013	1101	05	Non-malignant neoplasm of intestines & abdomen	Lower cost gastroenterology, III
475800		1	11.012	ign		Trauma of intestines & abdomen	Lower cost gastroenterology, II
476000		1	11.021	ign		Congenital anomalies of intestines & abdomen	Other moderate cost gastroenterology, I

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
476100		1	11.022	ign		Vascular diseases of intestines & abdomen	Other moderate cost gastroenterology, II
476300		1	11.022	1109	01	Bowel obstruction	Other moderate cost gastroenterology, II
476300		2	11.022	1109	01	Bowel obstruction	Other moderate cost gastroenterology, II
476400		1	11.013	1112	01	Irritable bowel syndrome	Lower cost gastroenterology, III
476600		1	11.031	1111	01	Hernias, except hiatal	Hernia
476600		2	11.031	1111	01	Hernias, except hiatal	Hernia
476600		3	11.031	1111	01	Hernias, except hiatal	Hernia
476800		1	11.031	1111	01	Hiatal hernia	Hernia
476900		1	11.013	ign		Other diseases of intestines & abdomen	Lower cost gastroenterology, III
477100		1	11.013	ign		Infection of rectum or anus	Lower cost gastroenterology, III
477400		1	11.011	ign		Hemorrhoids	Lower cost gastroenterology, I
477400		2	11.011	ign		Hemorrhoids	Lower cost gastroenterology, I
477600		1	11.013	ign		Inflammation of rectum or anus	Lower cost gastroenterology, III
477800	0	1	11.051	1101	04	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, I
477800	0	2	11.052	1101	03	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, II
477800	0	3	11.053	1101	02	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, III
477800	1	1	11.051	1101	04	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, I
477800	1	2	11.052	1101	03	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, II
477800	1	3	11.053	1101	02	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, III
477800	2	1	11.053	1101	02	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, III
477800	2	2	11.054	1101	01	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, IV
477800	2	3	11.054	1101	01	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, IV
477800	3	1	11.053	1101	02	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, III
477800	3	2	11.054	1101	01	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, IV
477800	3	3	11.054	1101	01	Malignant neoplasm of rectum or anus	Malignant neoplasm, gastroenterology, IV
478000		1	11.011	1101	06	Non-malignant neoplasm of rectum or anus	Lower cost gastroenterology, I
478300		1	11.012	ign		Trauma of rectum or anus, closed	Lower cost gastroenterology, II
478500		1	11.011	ign		Other diseases & disorders of rectum & anus	Lower cost gastroenterology, I
479900		1	11.011	all		Gastroenterology diseases signs & symptoms	Lower cost gastroenterology, I
521000		1	12.041	ign		Liver transplant	Liver transplant
521400		1	12.011	1201	04	Infectious hepatitis	Lower cost hepatology, I
521400		2	12.022	1201	03	Infectious hepatitis	Other moderate cost hepatology, II
521400		3	12.031	1201	01	Infectious hepatitis	Other higher cost hepatology, I
521600		1	12.011	1201	04	Non-infectious hepatitis	Lower cost hepatology, I
521600		2	12.012	1201	02	Non-infectious hepatitis	Lower cost hepatology, II
521800		1	12.032	ign		Cirrhosis	Other higher cost hepatology, II
521900		1	12.021	ign		Acute pancreatitis	Other moderate cost hepatology, I
522000		1	12.032	ign		Chronic pancreatitis	Other higher cost hepatology, II
522300		1	12.012	ign		Cholelithiasis	Lower cost hepatology, II
522300		2	12.021	ign		Cholelithiasis	Other moderate cost hepatology, I
522300		3	12.021	ign		Cholelithiasis	Other moderate cost hepatology, I
522400	0	1	12.051	1202	01	Malignant liver metastases	Malignant neoplasm, hepatobiliary system
522400	1	1	12.051	1202	01	Malignant liver metastases	Malignant neoplasm, hepatobiliary system
522400	2	1	12.051	1202	01	Malignant liver metastases	Malignant neoplasm, hepatobiliary system
522400	3	1	12.051	1202	01	Malignant liver metastases	Malignant neoplasm, hepatobiliary system
522500	0	1	12.051	1202	01	Malignant neoplasm of hepatobiliary system	Malignant neoplasm, hepatobiliary system
522500	1	1	12.051	1202	01	Malignant neoplasm of hepatobiliary system	Malignant neoplasm, hepatobiliary system
522500	2	1	12.051	1202	01	Malignant neoplasm of hepatobiliary system	Malignant neoplasm, hepatobiliary system
522500	3	1	12.051	1202	01	Malignant neoplasm of hepatobiliary system	Malignant neoplasm, hepatobiliary system
522700		1	12.031	1202	02	Non-malignant neoplasm of hepatobiliary system	Other higher cost hepatology, I
523000		1	12.021	ign		Trauma of hepatobiliary system	Other moderate cost hepatology, I
523000		2	12.021	ign		Trauma of hepatobiliary system	Other moderate cost hepatology, I
523200		1	12.011	ign		Other diseases of hepatobiliary system	Lower cost hepatology, I
529900		1	12.011	all		Hepatology diseases signs & symptoms	Lower cost hepatology, I
555000		1	13.031	1301	01	Kidney transplant	Kidney transplant
555200		1	13.051	1301	05	Acute renal failure	Acute renal failure
555400		1	13.041	1301	06	Chronic renal failure	Chronic renal failure, I
555400		2	13.042	1301	03	Chronic renal failure	Chronic renal failure, II
555400		3	13.042	1301	03	Chronic renal failure	Chronic renal failure, II
555400		4	13.043	1301	02	Chronic renal failure	Chronic renal failure, III
555600		1	13.021	1302	01	Acute renal inflammation	Other moderate cost nephrology
555800		1	13.021	1302	01	Chronic renal inflammation	Other moderate cost nephrology
556000		1	13.021	1302	01	Nephrotic syndrome	Other moderate cost nephrology
556000		2	13.021	1302	01	Nephrotic syndrome	Other moderate cost nephrology

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
556100		1	13.011	1302	02	Other renal conditions	Lower cost nephrology
559900		1	13.011	all		Nephrology diseases signs & symptoms	Lower cost nephrology
587100		1	14.012	ign		Infection of upper genitourinary system	Lower cost urology, II
587200		1	14.011	ign		Sexually transmitted diseases, primary	Lower cost urology, I
587300		1	14.011	ign		Sexually transmitted diseases, disseminated	Lower cost urology, I
587400		1	14.011	1402	02	Infection of lower genitourinary system, not sexually transmitted	Lower cost urology, I
587400		2	14.011	1402	02	Infection of lower genitourinary system, not sexually transmitted	Lower cost urology, I
587400		3	14.021	1402	01	Infection of lower genitourinary system, not sexually transmitted	Other moderate cost urology
587800		1	14.021	1405	01	Kidney stones	Other moderate cost urology
587800		2	14.021	1405	01	Kidney stones	Other moderate cost urology
587800		3	14.021	1405	01	Kidney stones	Other moderate cost urology
588000		1	14.012	1403	02	Inflammation of genitourinary system, except kidney stones	Lower cost urology, II
588000		2	14.021	1403	01	Inflammation of genitourinary system, except kidney stones	Other moderate cost urology
588000		3	14.021	1403	01	Inflammation of genitourinary system, except kidney stones	Other moderate cost urology
588200	0	1	14.031	1401	04	Malignant neoplasm of prostate	Malignant neoplasm, urology, I
588200	0	2	14.031	1401	04	Malignant neoplasm of prostate	Malignant neoplasm, urology, I
588200	0	3	14.032	1401	03	Malignant neoplasm of prostate	Malignant neoplasm, urology, II
588200	1	1	14.031	1401	04	Malignant neoplasm of prostate	Malignant neoplasm, urology, I
588200	1	2	14.031	1401	04	Malignant neoplasm of prostate	Malignant neoplasm, urology, I
588200	1	3	14.032	1401	03	Malignant neoplasm of prostate	Malignant neoplasm, urology, II
588200	2	1	14.032	1401	03	Malignant neoplasm of prostate	Malignant neoplasm, urology, II
588200	2	2	14.033	1401	02	Malignant neoplasm of prostate	Malignant neoplasm, urology, III
588200	2	3	14.034	1401	01	Malignant neoplasm of prostate	Malignant neoplasm, urology, IV
588200	3	1	14.032	1401	03	Malignant neoplasm of prostate	Malignant neoplasm, urology, II
588200	3	2	14.033	1401	02	Malignant neoplasm of prostate	Malignant neoplasm, urology, III
588200	3	3	14.034	1401	01	Malignant neoplasm of prostate	Malignant neoplasm, urology, IV
588400		1	14.011	1401	06	Non-malignant neoplasm of prostate	Lower cost urology, I
588400		2	14.012	1401	05	Non-malignant neoplasm of prostate	Lower cost urology, II
588600	0	1	14.031	1401	04	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, I
588600	0	2	14.032	1401	03	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, II
588600	1	1	14.031	1401	04	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, I
588600	1	2	14.032	1401	03	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, II
588600	2	1	14.033	1401	02	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, III
588600	2	2	14.034	1401	01	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, IV
588600	3	1	14.033	1401	02	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, III
588600	3	2	14.034	1401	01	Malignant neoplasm of genitourinary system, except prostate	Malignant neoplasm, urology, IV
588800		1	14.012	1401	05	Non-malignant neoplasm of genitourinary system, except prostate	Lower cost urology, II
589000		1	14.011	ign		Trauma to genitourinary system	Lower cost urology, I
589200		1	14.011	1404	03	Urinary incontinence	Lower cost urology, I
589200		2	14.012	1404	02	Urinary incontinence	Lower cost urology, II
589200		3	14.012	1404	02	Urinary incontinence	Lower cost urology, II
589200		4	14.021	1404	01	Urinary incontinence	Other moderate cost urology
589300		1	14.011	ign		Male infertility	Lower cost urology, I
589500		1	14.011	ign		Other diseases of genitourinary system	Lower cost urology, I
589900		1	14.011	all		Urological diseases signs & symptoms	Lower cost urology, I
601100		1	15.011	1501	02	Pregnancy, with delivery	Normal pregnancy, delivery, I
601100		2	15.011	1501	02	Pregnancy, with delivery	Normal pregnancy, delivery, I
601100		3	15.012	1501	01	Pregnancy, with delivery	Normal pregnancy, delivery, II
602100		1	15.032	1501	03	Ectopic pregnancy	Other moderate cost obstetrics, II
602200		1	15.032	1501	03	Spontaneous abortion	Other moderate cost obstetrics, II
602300		1	15.031	1501	05	Induced abortion	Other moderate cost obstetrics, I
602400		1	15.021	1501	04	Pregnancy, not yet delivered	Normal pregnancy, non-delivery
633200		1	16.021	ign		Infection of ovary &/or fallopian tubes	Other moderate cost gynecology, I
633500		1	16.021	ign		Infection of uterus	Other moderate cost gynecology, I
633700		1	16.011	ign		Infection of cervix	Lower cost gynecology, I
633900		1	16.011	ign		Monilial infection of vagina (yeast)	Lower cost gynecology, I
634000		1	16.011	ign		Infection of vagina except monilial	Lower cost gynecology, I
634200		1	16.022	ign		Endometriosis	Other moderate cost gynecology, II
634300		1	16.011	ign		Inflammatory condition of female genital tract, except endometriosis	Lower cost gynecology, I
634400	0	1	16.035	1601	07	Malignant neoplasm of cervix	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, I
634400	1	1	16.035	1601	07	Malignant neoplasm of cervix	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, I
634400	2	1	16.033	1601	02	Malignant neoplasm of cervix	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
634400	3	1	16.033	1601	02	Malignant neoplasm of cervix	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
634500	0	1	16.034	1601	05	Malignant neoplasm of ovaries	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
634500	1	1	16.034	1601	05	Malignant neoplasm of ovaries	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity
634500	2	1	16.031	1601	01	Malignant neoplasm of ovaries	Malignant neoplasm, breast/female genital tract, with active mgmt, with significant complication/comorbidity
634500	3	1	16.031	1601	01	Malignant neoplasm of ovaries	Malignant neoplasm, breast/female genital tract, with active mgmt, with significant complication/comorbidity
634600	0	1	16.036	1601	06	Malignant neoplasm of uterus	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, II
634600	1	1	16.036	1601	06	Malignant neoplasm of uterus	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, II
634600	2	1	16.033	1601	02	Malignant neoplasm of uterus	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
634600	3	1	16.033	1601	02	Malignant neoplasm of uterus	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
634700		1	16.012	1601	09	Non-malignant neoplasm of female genital tract	Lower cost gynecology, II
634700		2	16.021	1601	08	Non-malignant neoplasm of female genital tract	Other moderate cost gynecology, I
634700		3	16.021	1601	08	Non-malignant neoplasm of female genital tract	Other moderate cost gynecology, I
634700		4	16.021	1601	08	Non-malignant neoplasm of female genital tract	Other moderate cost gynecology, I
634900		1	16.011	ign		Conditions associated with menstruation	Lower cost gynecology, I
634900		2	16.011	ign		Conditions associated with menstruation	Lower cost gynecology, I
635100		1	16.023	ign		Conditions associated with infertility	Other moderate cost gynecology, III
635300		1	16.012	ign		Other diseases of female genital tract	Lower cost gynecology, II
635600	0	1	16.036	1601	06	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, II
635600	0	2	16.034	1601	05	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity
635600	0	3	16.034	1601	05	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity
635600	1	1	16.036	1601	06	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, w/o significant complication/comorbidity, II
635600	1	2	16.034	1601	05	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity
635600	1	3	16.034	1601	05	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, w/o active mgmt, with significant complication/comorbidity
635600	2	1	16.032	1601	03	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, I
635600	2	2	16.033	1601	02	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
635600	2	3	16.031	1601	01	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, with significant complication/comorbidity
635600	3	1	16.032	1601	03	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, I
635600	3	2	16.033	1601	02	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, w/o significant complication/comorbidity, II
635600	3	3	16.031	1601	01	Malignant neoplasm of breast	Malignant neoplasm, breast/female genital tract, with active mgmt, with significant complication/comorbidity
635800		1	16.011	1601	10	Non-malignant neoplasm of breast	Lower cost gynecology, I
635800		2	16.012	1601	09	Non-malignant neoplasm of breast	Lower cost gynecology, II
636000		1	16.011	ign		Other disorders of breast	Lower cost gynecology, I
639900		1	16.011	ign		Gynecological signs & symptoms	Lower cost gynecology, I
666700		1	17.011	1709	01	Acne	Lower cost dermatology, I
666800		1	17.011	ign		Contact dermatitis	Lower cost dermatology, I
666900		1	17.012	1701	02	Psoriasis	Lower cost dermatology, II
666900		2	17.022	1701	01	Psoriasis	Other moderate cost dermatology, II
667000		1	17.021	1702	03	Chronic skin ulcers	Other moderate cost dermatology, I
667000		2	17.022	1702	02	Chronic skin ulcers	Other moderate cost dermatology, II
667000		3	17.031	1702	01	Chronic skin ulcers	Other higher cost dermatology
667200		1	17.011	1703	02	Bacterial infection of skin	Lower cost dermatology, I
667200		2	17.012	1703	01	Bacterial infection of skin	Lower cost dermatology, II
667200		3	17.012	1703	01	Bacterial infection of skin	Lower cost dermatology, II
667300		1	17.011	ign		Viral skin infection	Lower cost dermatology, I
667500		1	17.011	1710	01	Fungal skin infection	Lower cost dermatology, I
667600		1	17.011	ign		Parasitic skin infection	Lower cost dermatology, I
667800		1	17.011	1704	02	Other inflammation of skin	Lower cost dermatology, I
667800		2	17.011	1704	02	Other inflammation of skin	Lower cost dermatology, I
667800		3	17.011	1704	02	Other inflammation of skin	Lower cost dermatology, I
667800		4	17.012	1704	01	Other inflammation of skin	Lower cost dermatology, II
668000	0	1	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	0	2	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	0	3	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	1	1	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	1	2	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	1	3	17.012	1705	03	Malignant neoplasm of skin, major	Lower cost dermatology, II
668000	2	1	17.022	1705	02	Malignant neoplasm of skin, major	Other moderate cost dermatology, II
668000	2	2	17.031	1705	01	Malignant neoplasm of skin, major	Other higher cost dermatology
668000	2	3	17.031	1705	01	Malignant neoplasm of skin, major	Other higher cost dermatology
668000	3	1	17.022	1705	02	Malignant neoplasm of skin, major	Other moderate cost dermatology, II
668000	3	2	17.031	1705	01	Malignant neoplasm of skin, major	Other higher cost dermatology
668000	3	3	17.031	1705	01	Malignant neoplasm of skin, major	Other higher cost dermatology
668100	0	1	17.012	1705	03	Malignant neoplasm of skin, minor	Lower cost dermatology, II
668100	1	1	17.012	1705	03	Malignant neoplasm of skin, minor	Lower cost dermatology, II
668200		1	17.011	1705	04	Non-malignant neoplasm of skin	Lower cost dermatology, I
668200		2	17.011	1705	04	Non-malignant neoplasm of skin	Lower cost dermatology, I

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
668700		1	17.011	1706	02	Burns	Lower cost dermatology, I
668700		2	17.012	1706	01	Burns	Lower cost dermatology, II
668700		3	17.012	1706	01	Burns	Lower cost dermatology, II
668901		1	17.011	1707	03	Open wound - foot & ankle	Lower cost dermatology, I
668901		2	17.012	1707	02	Open wound - foot & ankle	Lower cost dermatology, II
668902		1	17.011	1707	03	Open wound - lower leg	Lower cost dermatology, I
668902		2	17.012	1707	02	Open wound - lower leg	Lower cost dermatology, II
668903		1	17.011	1707	03	Open wound - hip & thigh	Lower cost dermatology, I
668903		2	17.012	1707	02	Open wound - hip & thigh	Lower cost dermatology, II
668904		1	17.011	1707	03	Open wound - hand & forearm	Lower cost dermatology, I
668904		2	17.011	1707	03	Open wound - hand & forearm	Lower cost dermatology, I
668905		1	17.011	1707	03	Open wound - elbow & upper arm	Lower cost dermatology, I
668905		2	17.012	1707	02	Open wound - elbow & upper arm	Lower cost dermatology, II
668906		1	17.012	1707	02	Open wound - shoulder	Lower cost dermatology, II
668907		1	17.011	1707	03	Open wound - head & face	Lower cost dermatology, I
668907		2	17.011	1707	03	Open wound - head & face	Lower cost dermatology, I
668909		1	17.012	1707	02	Open wound - trunk	Lower cost dermatology, II
668909		2	17.021	1707	01	Open wound - trunk	Other moderate cost dermatology, I
668912		1	17.011	1707	03	Open wound - unspecified	Lower cost dermatology, I
669001		1	17.011	1708	03	Skin trauma, except burn & open wound - foot & ankle	Lower cost dermatology, I
669001		2	17.021	1708	01	Skin trauma, except burn & open wound - foot & ankle	Other moderate cost dermatology, I
669002		1	17.011	1708	03	Skin trauma, except burn & open wound - lower leg	Lower cost dermatology, I
669002		2	17.021	1708	01	Skin trauma, except burn & open wound - lower leg	Other moderate cost dermatology, I
669003		1	17.011	1708	03	Skin trauma, except burn & open wound - hip & thigh	Lower cost dermatology, I
669003		2	17.021	1708	01	Skin trauma, except burn & open wound - hip & thigh	Other moderate cost dermatology, I
669004		1	17.011	1708	03	Skin trauma, except burn & open wound - hand & forearm	Lower cost dermatology, I
669005		1	17.011	1708	03	Skin trauma, except burn & open wound - elbow & upper arm	Lower cost dermatology, I
669006		1	17.011	1708	03	Skin trauma, except burn & open wound - shoulder	Lower cost dermatology, I
669007		1	17.011	1708	03	Skin trauma, except burn & open wound - head & face	Lower cost dermatology, I
669007		2	17.011	1708	03	Skin trauma, except burn & open wound - head & face	Lower cost dermatology, I
669007		3	17.012	1708	02	Skin trauma, except burn & open wound - head & face	Lower cost dermatology, II
669009		1	17.011	1708	03	Skin trauma, except burn & open wound - trunk	Lower cost dermatology, I
669009		2	17.012	1708	02	Skin trauma, except burn & open wound - trunk	Lower cost dermatology, II
669009		3	17.021	1708	01	Skin trauma, except burn & open wound - trunk	Other moderate cost dermatology, I
669010		1	17.011	1708	03	Skin trauma, except burn & open wound - other	Lower cost dermatology, I
669010		2	17.011	1708	03	Skin trauma, except burn & open wound - other	Lower cost dermatology, I
669012		1	17.011	1708	03	Skin trauma, except burn & open wound - unspecified	Lower cost dermatology, I
669100		1	17.011	ign		Other skin disorders	Lower cost dermatology, I
669900		1	17.011	all		Dermatological signs & symptoms	Lower cost dermatology, I
711101		1	18.042	ign		Infection of bone & joint - foot & ankle	Other higher cost orthopedics, II
711102		1	18.042	ign		Infection of bone & joint - knee & lower leg	Other higher cost orthopedics, II
711103		1	18.042	ign		Infection of bone & joint - thigh, hip & pelvis	Other higher cost orthopedics, II
711104		1	18.042	ign		Infection of bone & joint - hand, wrist & forearm	Other higher cost orthopedics, II
711105		1	18.042	ign		Infection of bone & joint - elbow & upper arm	Other higher cost orthopedics, II
711106		1	18.042	ign		Infection of bone & joint - shoulder	Other higher cost orthopedics, II
711112		1	18.042	ign		Infection of bone & joint - unspecified	Other higher cost orthopedics, II
711200		1	18.041	1805	02	Juvenile rheumatoid arthritis	Other higher cost orthopedics, I
711400		1	18.051	1805	01	Adult rheumatoid arthritis	Adult rheumatoid arthritis
711400		2	18.051	1805	01	Adult rheumatoid arthritis	Adult rheumatoid arthritis
711600		1	18.041	1801	01	Lupus	Other higher cost orthopedics, I
711600		2	18.041	1801	01	Lupus	Other higher cost orthopedics, I
711700		1	18.041	ign		Autoimmune rheumatologic diseases, except lupus	Other higher cost orthopedics, I
711901		1	18.031	1802	03	Major joint inflammation - foot & ankle	Joint degeneration & major joint inflammation, I
711902		1	18.031	1802	03	Major joint inflammation - knee & lower leg	Joint degeneration & major joint inflammation, I
711903		1	18.033	1802	01	Major joint inflammation - thigh, hip & pelvis	Joint degeneration & major joint inflammation, III
711904		1	18.031	1802	03	Major joint inflammation - hand, wrist & forearm	Joint degeneration & major joint inflammation, I
711905		1	18.031	1802	03	Major joint inflammation - elbow & upper arm	Joint degeneration & major joint inflammation, I
711906		1	18.032	1802	02	Major joint inflammation - shoulder	Joint degeneration & major joint inflammation, II
711908		1	18.031	1802	03	Major joint inflammation - back	Joint degeneration & major joint inflammation, I
711910		1	18.031	1802	03	Major joint inflammation - other	Joint degeneration & major joint inflammation, I
711912		1	18.032	1802	02	Major joint inflammation - unspecified	Joint degeneration & major joint inflammation, II
712000		1	18.011	1812	01	Osteoporosis	Lower cost orthopedics, I
712201		1	18.031	1802	03	Joint degeneration, localized - foot & ankle	Joint degeneration & major joint inflammation, I
712202		1	18.032	1802	02	Joint degeneration, localized - knee & lower leg	Joint degeneration & major joint inflammation, II

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
712202		2	18.032	1802	02	Joint degeneration, localized - knee & lower leg	Joint degeneration & major joint inflammation, II
712202		3	18.033	1802	01	Joint degeneration, localized - knee & lower leg	Joint degeneration & major joint inflammation, III
712203		1	18.031	1802	03	Joint degeneration, localized - thigh, hip & pelvis	Joint degeneration & major joint inflammation, I
712203		2	18.033	1802	01	Joint degeneration, localized - thigh, hip & pelvis	Joint degeneration & major joint inflammation, III
712203		3	18.033	1802	01	Joint degeneration, localized - thigh, hip & pelvis	Joint degeneration & major joint inflammation, III
712204		1	18.031	1802	03	Joint degeneration, localized - hand, wrist & forearm	Joint degeneration & major joint inflammation, I
712205		1	18.031	1802	03	Joint degeneration, localized - elbow & upper arm	Joint degeneration & major joint inflammation, I
712206		1	18.031	1802	03	Joint degeneration, localized - shoulder	Joint degeneration & major joint inflammation, I
712208		1	18.031	1802	03	Joint degeneration, localized - back	Joint degeneration & major joint inflammation, I
712208		2	18.032	1802	02	Joint degeneration, localized - back	Joint degeneration & major joint inflammation, II
712208		3	18.033	1802	01	Joint degeneration, localized - back	Joint degeneration & major joint inflammation, III
712211		1	18.031	1802	03	Joint degeneration, localized - neck	Joint degeneration & major joint inflammation, I
712211		2	18.031	1802	03	Joint degeneration, localized - neck	Joint degeneration & major joint inflammation, I
712211		3	18.032	1802	02	Joint degeneration, localized - neck	Joint degeneration & major joint inflammation, II
712212		1	18.031	1802	03	Joint degeneration, localized - unspecified	Joint degeneration & major joint inflammation, I
712901		1	18.024	1807	02	Open fracture or dislocation of lower extremity - foot & ankle	Orthopedic trauma, fracture or dislocation, IV
712902		1	18.024	1807	02	Open fracture or dislocation of lower extremity - knee & lower leg	Orthopedic trauma, fracture or dislocation, IV
712903		1	18.025	1807	01	Open fracture or dislocation - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, V
712904		1	18.023	1807	03	Open fracture or dislocation of upper extremity - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, III
712905		1	18.024	1807	02	Open fracture or dislocation of upper extremity - elbow & upper arm	Orthopedic trauma, fracture or dislocation, IV
712906		1	18.023	1807	03	Open fracture or dislocation of upper extremity - shoulder	Orthopedic trauma, fracture or dislocation, III
712907		1	18.023	1807	03	Open fracture or dislocation - head & face	Orthopedic trauma, fracture or dislocation, III
712909		1	18.024	1807	02	Open fracture or dislocation - trunk	Orthopedic trauma, fracture or dislocation, IV
713101		1	18.023	1807	03	Closed fracture or dislocation of lower extremity - foot & ankle	Orthopedic trauma, fracture or dislocation, III
713101		2	18.023	1807	03	Closed fracture or dislocation of lower extremity - foot & ankle	Orthopedic trauma, fracture or dislocation, III
713101		3	18.023	1807	03	Closed fracture or dislocation of lower extremity - foot & ankle	Orthopedic trauma, fracture or dislocation, III
713102		1	18.023	1807	03	Closed fracture or dislocation of lower extremity - knee & lower leg	Orthopedic trauma, fracture or dislocation, III
713103		1	18.024	1807	02	Closed fracture or dislocation - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, IV
713103		2	18.025	1807	01	Closed fracture or dislocation - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, V
713103		3	18.025	1807	01	Closed fracture or dislocation - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, V
713104		1	18.021	1807	05	Closed fracture or dislocation of upper extremity - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, I
713104		2	18.021	1807	05	Closed fracture or dislocation of upper extremity - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, I
713104		3	18.023	1807	03	Closed fracture or dislocation of upper extremity - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, III
713105		1	18.021	1807	05	Closed fracture or dislocation of upper extremity - elbow & upper arm	Orthopedic trauma, fracture or dislocation, I
713105		2	18.023	1807	03	Closed fracture or dislocation of upper extremity - elbow & upper arm	Orthopedic trauma, fracture or dislocation, III
713105		3	18.024	1807	02	Closed fracture or dislocation of upper extremity - elbow & upper arm	Orthopedic trauma, fracture or dislocation, IV
713106		1	18.023	1807	03	Closed fracture or dislocation of upper extremity - shoulder	Orthopedic trauma, fracture or dislocation, III
713107		1	18.023	1807	03	Closed fracture or dislocation - head & face	Orthopedic trauma, fracture or dislocation, III
713109		1	18.023	1807	03	Closed fracture or dislocation of trunk	Orthopedic trauma, fracture or dislocation, III
713600	0	1	18.062	1804	01	Malignant bone metastases	Malignant neoplasm, bone & connective tissue, II
713600	1	1	18.062	1804	01	Malignant bone metastases	Malignant neoplasm, bone & connective tissue, II
713600	2	1	18.062	1804	01	Malignant bone metastases	Malignant neoplasm, bone & connective tissue, II
713600	3	1	18.062	1804	01	Malignant bone metastases	Malignant neoplasm, bone & connective tissue, II
713800	0	1	18.061	1804	02	Malignant neoplasm of bone & connective tissue, head & neck	Malignant neoplasm, bone & connective tissue, I
713800	1	1	18.061	1804	02	Malignant neoplasm of bone & connective tissue, head & neck	Malignant neoplasm, bone & connective tissue, I
713800	2	1	18.062	1804	01	Malignant neoplasm of bone & connective tissue, head & neck	Malignant neoplasm, bone & connective tissue, II
713800	3	1	18.062	1804	01	Malignant neoplasm of bone & connective tissue, head & neck	Malignant neoplasm, bone & connective tissue, II
713900	0	1	18.061	1804	02	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, I
713900	0	2	18.061	1804	02	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, I
713900	1	1	18.061	1804	02	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, I
713900	1	2	18.061	1804	02	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, I
713900	2	1	18.062	1804	01	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, II
713900	2	2	18.062	1804	01	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, II
713900	3	1	18.062	1804	01	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, II
713900	3	2	18.062	1804	01	Malignant neoplasm of bone & connective tissue, other than head & neck	Malignant neoplasm, bone & connective tissue, II
714000		1	18.012	1804	03	Non-malignant neoplasm of bone & connective tissue, head & neck	Lower cost orthopedics, II
714100		1	18.012	1804	03	Non-malignant neoplasm of bone & connective tissue, other than head & neck	Lower cost orthopedics, II
714301		1	18.023	1807	03	Joint derangement - foot & ankle	Orthopedic trauma, fracture or dislocation, III
714302		1	18.023	1807	03	Joint derangement - knee & lower leg	Orthopedic trauma, fracture or dislocation, III
714302		2	18.023	1807	03	Joint derangement - knee & lower leg	Orthopedic trauma, fracture or dislocation, III
714303		1	18.024	1807	02	Joint derangement - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, IV
714304		1	18.023	1807	03	Joint derangement - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, III
714305		1	18.024	1807	02	Joint derangement - elbow & upper arm	Orthopedic trauma, fracture or dislocation, IV
714306		1	18.024	1807	02	Joint derangement - shoulder	Orthopedic trauma, fracture or dislocation, IV

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
714312		1	18.024	1807	02	Joint derangement - unspecified	Orthopedic trauma, fracture or dislocation, IV
714501		1	18.024	1807	02	Major trauma, other than fracture or dislocation - foot & ankle	Orthopedic trauma, fracture or dislocation, IV
714502		1	18.024	1807	02	Major trauma, other than fracture or dislocation - knee & lower leg	Orthopedic trauma, fracture or dislocation, IV
714503		1	18.024	1807	02	Major trauma, other than fracture or dislocation - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, IV
714504		1	18.023	1807	03	Major trauma, other than fracture or dislocation - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, III
714505		1	18.023	1807	03	Major trauma, other than fracture or dislocation - elbow & upper arm	Orthopedic trauma, fracture or dislocation, III
714506		1	18.024	1807	02	Major trauma, other than fracture or dislocation - shoulder	Orthopedic trauma, fracture or dislocation, IV
714509		1	18.025	1807	01	Major trauma, other than fracture or dislocation - trunk	Orthopedic trauma, fracture or dislocation, V
714512		1	18.025	1807	01	Major trauma, other than fracture or dislocation - unspecified	Orthopedic trauma, fracture or dislocation, V
714601		1	18.022	1807	04	Minor orthopedic trauma - foot & ankle	Orthopedic trauma, fracture or dislocation, II
714602		1	18.022	1807	04	Minor orthopedic trauma - knee & lower leg	Orthopedic trauma, fracture or dislocation, II
714603		1	18.022	1807	04	Minor orthopedic trauma - thigh, hip & pelvis	Orthopedic trauma, fracture or dislocation, II
714604		1	18.022	1807	04	Minor orthopedic trauma - hand, wrist & forearm	Orthopedic trauma, fracture or dislocation, II
714605		1	18.022	1807	04	Minor orthopedic trauma - elbow & upper arm	Orthopedic trauma, fracture or dislocation, II
714606		1	18.022	1807	04	Minor orthopedic trauma - shoulder	Orthopedic trauma, fracture or dislocation, II
714607		1	18.022	1807	04	Minor orthopedic trauma - head & face	Orthopedic trauma, fracture or dislocation, II
714608		1	18.022	1807	04	Minor orthopedic trauma - back	Orthopedic trauma, fracture or dislocation, II
714609		1	18.022	1807	04	Minor orthopedic trauma - trunk	Orthopedic trauma, fracture or dislocation, II
714611		1	18.022	1807	04	Minor orthopedic trauma - neck	Orthopedic trauma, fracture or dislocation, II
714612		1	18.022	1807	04	Minor orthopedic trauma - unspecified	Orthopedic trauma, fracture or dislocation, II
714801		1	18.011	1808	02	Bursitis & tendinitis - foot & ankle	Lower cost orthopedics, I
714802		1	18.011	1808	02	Bursitis & tendinitis - knee & lower leg	Lower cost orthopedics, I
714803		1	18.011	1808	02	Bursitis & tendinitis - thigh, hip & pelvis	Lower cost orthopedics, I
714804		1	18.011	1808	02	Bursitis & tendinitis - hand, wrist & forearm	Lower cost orthopedics, I
714805		1	18.011	1808	02	Bursitis & tendinitis - elbow & upper arm	Lower cost orthopedics, I
714806		1	18.012	1808	01	Bursitis & tendinitis - shoulder	Lower cost orthopedics, II
714806		2	18.012	1808	01	Bursitis & tendinitis - shoulder	Lower cost orthopedics, II
714812		1	18.011	1808	02	Bursitis & tendinitis - unspecified	Lower cost orthopedics, I
714901		1	18.011	ign		Other minor orthopedic disorders - foot & ankle	Lower cost orthopedics, I
714902		1	18.011	ign		Other minor orthopedic disorders - knee & lower leg	Lower cost orthopedics, I
714903		1	18.011	ign		Other minor orthopedic disorders - thigh, hip & pelvis	Lower cost orthopedics, I
714904		1	18.011	ign		Other minor orthopedic disorders - hand, wrist & forearm	Lower cost orthopedics, I
714905		1	18.011	ign		Other minor orthopedic disorders - elbow & upper arm	Lower cost orthopedics, I
714906		1	18.011	ign		Other minor orthopedic disorders - shoulder	Lower cost orthopedics, I
714908		1	18.011	ign		Other minor orthopedic disorders - back	Lower cost orthopedics, I
714911		1	18.011	ign		Other minor orthopedic disorders - neck	Lower cost orthopedics, I
714912		1	18.011	ign		Other minor orthopedic disorders - unspecified	Lower cost orthopedics, I
715101		1	18.012	1811	01	Orthopedic deformity - foot & ankle	Lower cost orthopedics, II
715101		2	18.012	1811	01	Orthopedic deformity - foot & ankle	Lower cost orthopedics, II
715102		1	18.012	1811	01	Orthopedic deformity - knee & lower leg	Lower cost orthopedics, II
715103		1	18.012	1811	01	Orthopedic deformity - thigh, hip & pelvis	Lower cost orthopedics, II
715104		1	18.012	1811	01	Orthopedic deformity - hand, wrist & forearm	Lower cost orthopedics, II
715105		1	18.012	1811	01	Orthopedic deformity - elbow & upper arm	Lower cost orthopedics, II
715106		1	18.012	1811	01	Orthopedic deformity - shoulder	Lower cost orthopedics, II
715107		1	18.012	1811	01	Orthopedic deformity - head & face	Lower cost orthopedics, II
715108		1	18.012	1811	01	Orthopedic deformity - back	Lower cost orthopedics, II
715109		1	18.012	1811	01	Orthopedic deformity - trunk	Lower cost orthopedics, II
715111		1	18.012	1811	01	Orthopedic deformity - neck	Lower cost orthopedics, II
715112		1	18.012	1811	01	Orthopedic deformity - unspecified	Lower cost orthopedics, II
719901		1	18.011	all		Orthopedic signs & symptoms - foot & ankle	Lower cost orthopedics, I
719902		1	18.011	all		Orthopedic signs & symptoms - knee & lower leg	Lower cost orthopedics, I
719903		1	18.011	all		Orthopedic signs & symptoms - thigh, hip & pelvis	Lower cost orthopedics, I
719904		1	18.011	all		Orthopedic signs & symptoms - hand, wrist & forearm	Lower cost orthopedics, I
719905		1	18.011	all		Orthopedic signs & symptoms - elbow & upper arm	Lower cost orthopedics, I
719906		1	18.011	all		Orthopedic signs & symptoms - shoulder	Lower cost orthopedics, I
719908		1	18.011	all		Orthopedic signs & symptoms - back	Lower cost orthopedics, I
719911		1	18.011	all		Orthopedic signs & symptoms - neck	Lower cost orthopedics, I
719912		1	18.011	all		Orthopedic signs & symptoms - unspecified	Lower cost orthopedics, I
748000		1	19.011	1901	04	Uncomplicated neonatal management	Other neonatal, I
748100		1	19.021	1901	01	Chromosomal anomalies	Other higher cost neonatal
748200		1	19.013	1901	02	Metabolic related disorders, antenatal origin	Other neonatal, III
748300		1	19.013	1901	02	Chemical dependency related disorders, antenatal origin	Other neonatal, III
748400		1	19.012	1901	03	Mechanical related disorders, antenatal origin	Other neonatal, II
748500		1	19.012	1901	03	Other disorders, antenatal origin	Other neonatal, II

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
748700		1	19.011	1901	04	Other neonatal disorders, perinatal origin	Other neonatal, I
748700		2	19.013	1901	02	Other neonatal disorders, perinatal origin	Other neonatal, III
749900		1	19.011	all		Neonatal diseases signs & symptoms	Other neonatal, I
821000		1	21.011	ign		Late effects & late complications	Late effects & complications
821100		1	21.021	ign		Environmental trauma	Environmental trauma
821200		1	21.031	2101	03	Poisonings & toxic effects of drugs	Poisonings & toxic effects of drugs, I
821200		2	21.032	2101	02	Poisonings & toxic effects of drugs	Poisonings & toxic effects of drugs, II
821200		3	21.033	2101	01	Poisonings & toxic effects of drugs	Poisonings & toxic effects of drugs, III
901000		1	01.051	0101	11	Ongoing Rx Tx wo Prov intervention - Non-HIV antiviral treatment	Viral diseases
901100		1	01.042	0101	04	Ongoing Rx Tx wo Prov intervention - HIV/AIDS antiviral treatment	AIDS/HIV, II
901200		1	01.034	0101	07	Ongoing Rx Tx wo Prov intervention - Leprosy treatment	Non-HIV major infectious diseases, IV
901400		1	02.011	ign		Ongoing Rx Tx wo Prov intervention - Hyperuricemia/gout treatment	Lower cost endocrinology, I
901500		1	02.011	0215	03	Ongoing Rx Tx wo Prov intervention - Impotence treatment	Lower cost endocrinology, I
901600		1	02.031	0209	02	Ongoing Rx Tx wo Prov intervention - Antihyperlipidemic treatment	Hyperlipidemia, excluding lipidoses
901700		1	02.012	0211	03	Ongoing Rx Tx wo Prov intervention - Nutritional treatment	Lower cost endocrinology, II
901800		1	02.012	0203	03	Ongoing Rx Tx wo Prov intervention - Pancreatic enzyme replacement treatment	Lower cost endocrinology, II
901900		1	RX.011	ign		Ongoing Rx Tx wo Prov intervention - Respiratory enzyme deficiency treatment	High cost pharmacy only
902000		1	02.011	0201	03	Ongoing Rx Tx wo Prov intervention - Thyroid hormone replacement treatment	Lower cost endocrinology, I
902100		1	02.012	0215	01	Ongoing Rx Tx wo Prov intervention - Testosterone replacement treatment	Lower cost endocrinology, II
902200		1	02.011	0212	02	Ongoing Rx Tx wo Prov intervention - Weight reduction treatment	Lower cost endocrinology, I
902300		1	RX.011	ign		Ongoing Rx Tx wo Prov intervention - Colony stimulating treatment	High cost pharmacy only
902400		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Anxiety/panic disorder treatment	Lower cost psychiatry, II
902500		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Depression treatment	Lower cost psychiatry, II
902600		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Mania/affective disorder treatment	Lower cost psychiatry, II
902700		1	04.021	0401	07	Ongoing Rx Tx wo Prov intervention - Psychosis/schizophrenia treatment	Other moderate cost psychiatry
902800		1	06.032	ign		Ongoing Rx Tx wo Prov intervention - Anticonvulsant treatment	Other moderate cost neurology, II
902900		1	06.032	0601	05	Ongoing Rx Tx wo Prov intervention - Alzheimer's disease treatment	Other moderate cost neurology, II
903000		1	06.021	0605	02	Ongoing Rx Tx wo Prov intervention - Migraine treatment	Migraine headache, w/o significant complication/comorbidity
903100		1	06.061	0601	04	Ongoing Rx Tx wo Prov intervention - Multiple sclerosis/ALS treatment	Multiple sclerosis & ALS, I
903200		1	06.032	0601	05	Ongoing Rx Tx wo Prov intervention - Parkinson's syndrome treatment	Other moderate cost neurology, II
903300		1	07.031	ign		Ongoing Rx Tx wo Prov intervention - Glaucoma treatment	Glaucoma
903400		1	08.021	ign		Ongoing Rx Tx wo Prov intervention - Anticoagulant treatment	Other moderate cost cardiology, I
903500		1	08.012	ign		Ongoing Rx Tx wo Prov intervention - Antiplatelet treatment	Lower cost cardiology, II
903600		1	08.021	0804	01	Ongoing Rx Tx wo Prov intervention - Antiarrhythmic treatment	Other moderate cost cardiology, I
903700		1	08.012	0801	19	Ongoing Rx Tx wo Prov intervention - Hypertension/heart disease treatment	Lower cost cardiology, II
903900		1	09.011	0903	03	Ongoing Rx Tx wo Prov intervention - Sinusitis/rhinitis treatment	Lower cost ear/nose/throat, I
904000		1	10.041	1005	07	Ongoing Rx Tx wo Prov intervention - Asthma treatment	Asthma, chronic obstructive pulmonary disease, I
904100		1	10.041	1005	07	Ongoing Rx Tx wo Prov intervention - Bronchodilator treatment	Asthma, chronic obstructive pulmonary disease, I
904200		1	10.042	1005	03	Ongoing Rx Tx wo Prov intervention - Emphysema/COPD treatment	Asthma, chronic obstructive pulmonary disease, II
904300		1	11.021	1108	03	Ongoing Rx Tx wo Prov intervention - Inflammatory bowel disease treatment	Other moderate cost gastroenterology, I
904400		1	11.013	1112	01	Ongoing Rx Tx wo Prov intervention - Irritable bowel disease treatment	Lower cost gastroenterology, III
904500		1	11.013	1105	03	Ongoing Rx Tx wo Prov intervention - Acid peptic disease treatment	Lower cost gastroenterology, III
904600		1	14.012	1401	05	Ongoing Rx Tx wo Prov intervention - Benign prostatic hypertrophy treatment	Lower cost urology, II
904700		1	14.012	ign		Ongoing Rx Tx wo Prov intervention - Incontinence treatment	Lower cost urology, II
901000		1	01.051	0101	11	Ongoing Rx Tx wo Prov intervention - Non-HIV antiviral treatment	Viral diseases
901100		1	01.042	0101	04	Ongoing Rx Tx wo Prov intervention - HIV/AIDS antiviral treatment	AIDS/HIV, II
901200		1	01.034	0101	07	Ongoing Rx Tx wo Prov intervention - Leprosy treatment	Non-HIV major infectious diseases, IV
901300		1	02.021	0202	97	Ongoing Rx Tx wo Prov intervention - Diabetes mellitus treatment	Diabetes, w/o significant complication/comorbidity
901400		1	02.011	ign		Ongoing Rx Tx wo Prov intervention - Hyperuricemia/gout treatment	Lower cost endocrinology, I
901500		1	02.011	0215	03	Ongoing Rx Tx wo Prov intervention - Impotence treatment	Lower cost endocrinology, I
901600		1	02.031	0209	02	Ongoing Rx Tx wo Prov intervention - Antihyperlipidemic treatment	Hyperlipidemia, excluding lipidoses
901700		1	02.012	0211	03	Ongoing Rx Tx wo Prov intervention - Nutritional treatment	Lower cost endocrinology, II
901800		1	02.012	0203	03	Ongoing Rx Tx wo Prov intervention - Pancreatic enzyme replacement treatment	Lower cost endocrinology, II
901900		1	RX.011	ign		Ongoing Rx Tx wo Prov intervention - Respiratory enzyme deficiency treatment	High cost pharmacy only
902000		1	02.011	0201	03	Ongoing Rx Tx wo Prov intervention - Thyroid hormone replacement treatment	Lower cost endocrinology, I
902100		1	02.012	0215	01	Ongoing Rx Tx wo Prov intervention - Testosterone replacement treatment	Lower cost endocrinology, II
902200		1	02.011	0212	02	Ongoing Rx Tx wo Prov intervention - Weight reduction treatment	Lower cost endocrinology, I
902300		1	RX.011	ign		Ongoing Rx Tx wo Prov intervention - Colony stimulating treatment	High cost pharmacy only
902400		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Anxiety/panic disorder treatment	Lower cost psychiatry, II
902500		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Depression treatment	Lower cost psychiatry, II
902600		1	04.012	0401	08	Ongoing Rx Tx wo Prov intervention - Mania/affective disorder treatment	Lower cost psychiatry, II
902700		1	04.021	0401	07	Ongoing Rx Tx wo Prov intervention - Psychosis/schizophrenia treatment	Other moderate cost psychiatry
902800		1	06.032	ign		Ongoing Rx Tx wo Prov intervention - Anticonvulsant treatment	Other moderate cost neurology, II
902900		1	06.032	0601	05	Ongoing Rx Tx wo Prov intervention - Alzheimer's disease treatment	Other moderate cost neurology, II

ETG	Treatment	Severity	ERG	hierarchy	priority	ETG Base 'Description	ERG Description
903000		1	06.021	0605	02	Ongoing Rx Tx wo Prov intervention - Migraine treatment	Migraine headache, w/o significant complication/comorbidity
903100		1	06.061	0601	04	Ongoing Rx Tx wo Prov intervention - Multiple sclerosis/ALS treatment	Multiple sclerosis & ALS, I
903200		1	06.032	0601	05	Ongoing Rx Tx wo Prov intervention - Parkinson's syndrome treatment	Other moderate cost neurology, II
903300		1	07.031	ign		Ongoing Rx Tx wo Prov intervention - Glaucoma treatment	Glaucoma
903400		1	08.021	ign		Ongoing Rx Tx wo Prov intervention - Anticoagulant treatment	Other moderate cost cardiology, I
903500		1	08.012	ign		Ongoing Rx Tx wo Prov intervention - Antiplatelet treatment	Lower cost cardiology, II
903600		1	08.021	0804	01	Ongoing Rx Tx wo Prov intervention - Antiarrhythmic treatment	Other moderate cost cardiology, I
903700		1	08.012	0801	19	Ongoing Rx Tx wo Prov intervention - Hypertension/heart disease treatment	Lower cost cardiology, II
903900		1	09.011	0903	03	Ongoing Rx Tx wo Prov intervention - Sinusitis/rhinitis treatment	Lower cost ear/nose/throat, I
904000		1	10.041	1005	07	Ongoing Rx Tx wo Prov intervention - Asthma treatment	Asthma, chronic obstructive pulmonary disease, I
904100		1	10.041	1005	07	Ongoing Rx Tx wo Prov intervention - Bronchodilator treatment	Asthma, chronic obstructive pulmonary disease, I
904200		1	10.042	1005	03	Ongoing Rx Tx wo Prov intervention - Emphysema/COPD treatment	Asthma, chronic obstructive pulmonary disease, II
904300		1	11.021	1108	03	Ongoing Rx Tx wo Prov intervention - Inflammatory bowel disease treatment	Other moderate cost gastroenterology, I
904400		1	11.013	1112	01	Ongoing Rx Tx wo Prov intervention - Irritable bowel disease treatment	Lower cost gastroenterology, III
904500		1	11.013	1105	03	Ongoing Rx Tx wo Prov intervention - Acid peptic disease treatment	Lower cost gastroenterology, III
904600		1	14.012	1401	05	Ongoing Rx Tx wo Prov intervention - Benign prostatic hypertrophy treatment	Lower cost urology, II
904700		1	14.012	ign		Ongoing Rx Tx wo Prov intervention - Incontinence treatment	Lower cost urology, II

**NQF Resource Use Measure submission**

**For question S5- Data Dictionary/Code Tables**

**The content contained in this document is proprietary and confidential**

**Measure** Non-Condition Specific (Population)

This table describes the the ERG Risk Categories. Please also refer the general overview of ETG and ERG referenced in S2.

<b>RISK_CAT</b>	<b>RISK_CAT_DESC</b>	<b>RISKCAT_LV2</b>	<b>RISKCAT_LV2_DESC</b>
0	0.00 - 0.0085	1	0.00 - 0.47
1	0.0085 - 0.0695	1	0.00 - 0.47
2	0.0695 - 0.13	1	0.00 - 0.47
3	0.13 - 0.188	1	0.00 - 0.47
4	0.188 - 0.251	1	0.00 - 0.47
5	0.251 - 0.313	1	0.00 - 0.47
6	0.313 - 0.376	1	0.00 - 0.47
7	0.376 - 0.47	1	0.00 - 0.47
8	0.47 - 0.627	2	0.47 - 0.94
9	0.627 - 0.783	2	0.47 - 0.94
10	0.783 - 0.94	2	0.47 - 0.94
11	0.94 - 1.097	3	0.94 - 1.88
12	1.097 - 1.253	3	0.94 - 1.88
13	1.253 - 1.567	3	0.94 - 1.88
14	1.567 - 1.88	3	0.94 - 1.88
15	1.88 - 2.507	4	1.88 - 3.76
16	2.507 - 3.1325	4	1.88 - 3.76
17	3.1325 - 3.76	4	1.88 - 3.76
18	3.76 - 4.70	5	3.76 - 9.40
19	4.70 - 6.27	5	3.76 - 9.40
20	6.27 - 9.40	5	3.76 - 9.40
21	9.40 - 12.53	6	> 9.40
22	12.53 - 18.80	6	> 9.40
23	18.80 - 25.10	6	> 9.40
24	25.10 - 31.33	6	> 9.40
25	> 31.33	6	> 9.40

NQF Resource Use Measure submission

MEDICAL CLAIM DATA ELEMENTS

For question S6 - Answer: Ingenix Data Protocol

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Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanum	32	Unique Member Identifier
Date of Service	date	10	
From/Admission Date	date	10	First Date of Service for inpatient records
To/Discharge Date	date	10	Last Date of Service for inpatient records
Payment Date	date	10	
ICD9 Diagnosis Code 1	alphanum	6	
ICD9 Diagnosis Code 2	alphanum	6	
ICD9 Diagnosis Code 3	alphanum	6	
ICD9 Diagnosis Code 4	alphanum	6	
ICD9 Diagnosis Code 5	alphanum	6	
ICD9 Procedure Code 1	alphanum	6	
ICD9 Procedure Code 2	alphanum	6	
ICD9 Procedure Code 3	alphanum	6	
ICD9 Procedure Code 4	alphanum	6	
ICD9 Procedure Code 5	alphanum	6	
ICD9 Procedure Code 6	alphanum	6	
Procedure Code	alphanum	15	CPT or HCPC Procedure Code
Revenue Code	alphanum	15	NUBC Revenue Code
Procedure Code Modifier	alphanum	4	CPT or HCPC Procedure Code Modifier
DRG Code	alphanum	4	Include map/crosswalk table
DRG Version	alphanum	3	Used to identify the DRG Grouper used for the claim (e.g., AP, APR, APS, CMS, MS)
Place of Service Code	alphanum	3	Include map/crosswalk table
Quantity	numeric	4	
Provider ID	alphanum	20	Unique Provider Identifier
Provider Specialty	alphanum	30	Service Category specific to the claim. Include map/crosswalk table.
Allowed Amount	numeric	10.2	Includes capitation and patient liability amounts
Requested/Billed Amount	numeric	10.2	
Payment Amount	numeric	10.2	Includes withhold amounts

NQF Resource Use Measure submission

RA CLAIM DATA ELEMENTS

For question S6 - Answer: Ingenix Data Protocol

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanum	32	Unique Member Identifier
Date of Service	date	10	
Payment Date	date	10	
NDC Code	alphanum	11	
Prescribing Provider ID	alphanum	20	May be omitted if not available. DEA number may also be provided if able to link to the Provider ID.
Allowed Amount	numeric	10.2	Includes capitation and patient liability amounts
Requested/Billed Amount	numeric	10.2	
Payment Amount	numeric	10.2	Includes withhold amounts

NQF Resource Use Measure submission

MEMBER DATA ELEMENTS

For question S6 - Answer: Ingenix Data Protocol

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Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanumeric	32	Unique Member Identifier
Sex	alphanumeric	1	
Date of Birth	date	10	
Effective Date	date	10	Eligibility Begin Date
End Date	date	10	Eligibility End Date
Member Zip Code	alphanumeric	10	Supports geographic-based member analysis. May be omitted if not available or applicable.
Member State Code	alphanumeric	2	Supports geographic-based member analysis. May be omitted if not available or applicable.
Pharmacy Benefit Flag	alphanumeric	1	
PCP ID	alphanumeric	20	Unique Provider Identifier of the Member's Primary Care Provider (if assigned)
Product/Coverage Code Identifier	alphanumeric	30	Supports product-based (e.g., Commercial, Medicare, Medicaid, HMO, PPO, etc) analysis. May be omitted if not available or applicable.

For question S6 - Answer: Ingenix Data Protocol

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Provider ID	alphanumeric	20	Unique Provider Identifier
Provider Specialty	alphanumeric	30	Provider's Primary Specialty - used for Peer Group assignment. Include map/crosswalk table.
PCP Indicator	numeric	1	Indicates whether or not the Provider can serve as a PCP
Provider Zip Code	alphanumeric	10	Supports geographic-based provider analysis. May be omitted if not available or applicable.
Provider State Code	alphanumeric	2	Supports geographic-based provider analysis. May be omitted if not available or applicable.
Provider Affiliation	alphanumeric	30	Provider's Affiliation/Group Practice - used to support Affiliation/Group Practice Peer Groups. May be omitted if not available or applicable.

NQF Resource Use Measure submission

MEDICAL CLAIM DATA ELEMENTS

For question S7.2 - Answer: Ingenix Data Source Reference

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanum	32	Unique Member Identifier
Date of Service	date	10	
From/Admission Date	date	10	First Date of Service for inpatient records
To/Discharge Date	date	10	Last Date of Service for inpatient records
Payment Date	date	10	
ICD9 Diagnosis Code 1	alphanum	6	
ICD9 Diagnosis Code 2	alphanum	6	
ICD9 Diagnosis Code 3	alphanum	6	
ICD9 Diagnosis Code 4	alphanum	6	
ICD9 Diagnosis Code 5	alphanum	6	
ICD9 Procedure Code 1	alphanum	6	
ICD9 Procedure Code 2	alphanum	6	
ICD9 Procedure Code 3	alphanum	6	
ICD9 Procedure Code 4	alphanum	6	
ICD9 Procedure Code 5	alphanum	6	
ICD9 Procedure Code 6	alphanum	6	
Procedure Code	alphanum	15	CPT or HCPC Procedure Code
Revenue Code	alphanum	15	NUBC Revenue Code
Procedure Code Modifier	alphanum	4	CPT or HCPC Procedure Code Modifier
DRG Code	alphanum	4	Include map/crosswalk table
DRG Version	alphanum	3	Used to identify the DRG Grouper used for the claim (e.g., AP, APR, APS, CMS, MS)
Place of Service Code	alphanum	3	Include map/crosswalk table
Quantity	numeric	4	
Provider ID	alphanum	20	Unique Provider Identifier
Provider Specialty	alphanum	30	Service Category specific to the claim. Include map/crosswalk table.
Allowed Amount	numeric	10.2	Includes capitation and patient liability amounts
Requested/Billed Amount	numeric	10.2	
Payment Amount	numeric	10.2	Includes withhold amounts

NQF Resource Use Measure submission

RX CLAIM DATA ELEMENTS

For question S7.2 - Answer: Ingenix Data Source Reference

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanum	32	Unique Member Identifier
Date of Service	date	10	
Payment Date	date	10	
NDC Code	alphanum	11	
Prescribing Provider ID	alphanum	20	May be omitted if not available. DEA number may also be provided if able to link to the Provider ID.
Allowed Amount	numeric	10.2	Includes capitation and patient liability amounts
Requested/Billed Amount	numeric	10.2	
Payment Amount	numeric	10.2	Includes withhold amounts

NQF Resource Use Measure submission

MEMBER DATA ELEMENTS

For question S7.2 - Answer: Ingenix Data Source Reference

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Member ID	alphanumeric	32	Unique Member Identifier
Sex	alphanumeric	1	
Date of Birth	date	10	
Effective Date	date	10	Eligibility Begin Date
End Date	date	10	Eligibility End Date
Member Zip Code	alphanumeric	10	Supports geographic-based member analysis. May be omitted if not available or applicable.
Member State Code	alphanumeric	2	Supports geographic-based member analysis. May be omitted if not available or applicable.
Pharmacy Benefit Flag	alphanumeric	1	
PCP ID	alphanumeric	20	Unique Provider Identifier of the Member's Primary Care Provider (if assigned)
Product/Coverage Code Identifier	alphanumeric	30	Supports product-based (e.g., Commercial, Medicare, Medicaid, HMO, PPO, etc) analysis. May be omitted if not available or applicable.

NQF Resource Use Measure submission

PROVIDER DATA ELEMENTS

For question S7.2 - Answer: Ingenix Data Source Reference

The content contained in this document is proprietary and confidential

Measure: Cycle 1 Condition Submission for: Diabetes, CHF, AMI, Stroke, CAD, Non-Condition Specific/Population

Data Element Name	Field Type	Maximum Length	Data Element Comments
Provider ID	alphanumeric	20	Unique Provider Identifier
Provider Specialty	alphanumeric	30	Provider's Primary Specialty - used for Peer Group assignment. Include map/crosswalk table.
PCP Indicator	numeric	1	Indicates whether or not the Provider can serve as a PCP
Provider Zip Code	alphanumeric	10	Supports geographic-based provider analysis. May be omitted if not available or applicable.
Provider State Code	alphanumeric	2	Supports geographic-based provider analysis. May be omitted if not available or applicable.
Provider Affiliation	alphanumeric	30	Provider's Affiliation/Group Practice - used to support Affiliation/Group Practice Peer Groups. May be omitted if not available or applicable.

**NQF Resource Use Measure submission****ERG ENROLLMENT PERIODS****For question S8\_Clinical Logic**

**The content contained in this document is proprietary and confidential**

**Measure** Non-Condition Specific (Population)

A member's length of enrollment may affect the number and mix of episodes of care observed. This will ultimately affect the ERG risk markers assigned and risk scores generated by the ERG models. Partial enrollment reflects the number of days a member was enrolled during the experience period and a risk weight assignment for the ERG array is based on that length of time. All ERG models utilize partial enrollment to determine the weights used in computing risk.

With this approach, ERG will apply 1 of 4 separate sets of risk weights that correspond with the member's length of enrollment during the 12-month experience period. The enrollment periods are categorized as follows:

Enrollment Period	Days
1-3 months	1-91
4-6 months	92-183
7-9 months	184-274
10-12 months	275-365/366

**NQF Resource Use Measure submission**

For question S10\_Risk Adjustment Method Example

The content contained in this document is proprietary and confidential

Measure Non-Condition Specific  
(Population)

Internal Medicine, Medical Group A				
ERG Risk Level	Number of Member Months	Observed Cost PMPM	Peers Cost PMPM	Relative Cost of Care Ratio
<b>Dr Smith</b>	<b>By Risk Level</b>			
Risk Level 1	65	\$30	\$35	0.85
Risk Level 2	60	\$45	\$50	0.90
Risk Level 3	48	\$75	\$68	1.10
Risk Level 5	54	\$110	\$85	1.30
Risk Level 9	35	\$160	\$200	0.80
Risk Level 12	48	\$400	\$250	1.60
Risk Level 15	24	\$1,500	\$1,071	1.40
Risk Level 26	22	\$3,000	\$2,727	1.10
<b>Dr Jones</b>	<b>By Risk Level</b>			
Risk Level 1	55	\$30	\$35	0.85
Risk Level 2	60	\$30	\$50	0.60
Risk Level 4	57	\$64	\$65	0.98
Risk Level 5	40	\$94	\$85	1.10
Risk Level 9	25	\$190	\$200	0.95
Risk Level 13	60	\$280	\$350	0.80
Risk Level 15	25	\$1,071	\$1,071	1.00
Risk Level 20	24	\$1,800	\$2,000	0.90
Risk Level 26	12	\$2,727	\$2,727	1.00
<b>Dr Smith</b>	<b>Overall</b>			
CHF	356	396	331	1.20
<b>Dr Jones</b>	<b>Overall</b>			
CHF	358	377	407	0.93

For question SA Reliability &amp; Validity Testing

The content contained in this document is proprietary and confidential

Measure

Non-Condition  
Specific  
(Population)

	<b>PCP Family Medicine Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	895,679	8,876,255	9,771,934
Total PMPM	\$ 135	\$ 196	\$ 190
Primary Care Core PMPM	\$ 15	\$ 16	\$ 16
Specialist PMPM	\$ 58	\$ 57	\$ 57
ER PMPM	\$ 5	\$ 7	\$ 7
Radiology PMPM	\$ 15	\$ 15	\$ 15
Pharmacy PMPM	\$ 0	\$ 53	\$ 48
Lab PMPM	\$ 9	\$ 8	\$ 9
Hospital PMPM	\$ 32	\$ 39	\$ 39

	<b>PCP Internal Medicine Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	897,826	9,370,353	10,268,179
Total PMPM	\$ 133	\$ 158	\$ 156
Primary Care Core PMPM	\$ 11	\$ 10	\$ 10
Specialist PMPM	\$ 58	\$ 48	\$ 49
ER PMPM	\$ 5	\$ 5	\$ 5
Radiology PMPM	\$ 15	\$ 12	\$ 12
Pharmacy PMPM	\$ 0	\$ 47	\$ 43
Lab PMPM	\$ 9	\$ 7	\$ 7
Hospital PMPM	\$ 36	\$ 29	\$ 29

	<b>PCP Pediatrics Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	559,987	5,786,238	6,346,225
Total PMPM	\$ 56	\$ 83	\$ 80
Primary Care Core PMPM	\$ 13	\$ 15	\$ 15
Specialist PMPM	\$ 23	\$ 28	\$ 28
ER PMPM	\$ 5	\$ 5	\$ 5
Radiology PMPM	\$ 3	\$ 3	\$ 3
Pharmacy PMPM	\$ 0	\$ 17	\$ 15
Lab PMPM	\$ 2	\$ 2	\$ 2
Hospital PMPM	\$ 10	\$ 12	\$ 12

For question SA Reliability &amp; Validity Testing

The content contained in this document is proprietary and confidential

## Measure

Non-Condition  
Specific  
(Population)

	<b>PCP Family Medicine Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	895,679	8,876,255	9,771,934
PCP Visits per 1000 Members	142	149	148
Referral Visits per 1000 Members	130	116	118
Referral Encounters per 1000 Members	83	74	75
Radiology Encounters per 1000 Members	65	62	63
Lab Encounters per 1000 Members	133	125	126
MRI Encounters per 1000 Members	5	5	5
ER Visits per 1000 Members	10	13	13
Inpatient Days per 1000 Members	6	9	8
Admissions per 1000 Members	2	3	2
Prescriptions per 1000 Members	3	807	733
Generic Prescriptions per 1000 Members	2	538	489

	<b>PCP Internal Medicine Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	897,826	9,370,353	10,268,179
PCP Visits per 1000 Members	107	95	96
Referral Visits per 1000 Members	135	108	111
Referral Encounters per 1000 Members	81	67	68
Radiology Encounters per 1000 Members	61	51	52
Lab Encounters per 1000 Members	111	93	94
MRI Encounters per 1000 Members	4	4	4
ER Visits per 1000 Members	9	9	9
Inpatient Days per 1000 Members	7	7	7
Admissions per 1000 Members	2	2	2
Prescriptions per 1000 Members	2	642	586
Generic Prescriptions per 1000 Members	1	402	367

	<b>PCP Pediatrics Peer Definition</b>		
	Pharmacy Qualified Status		
	No	Yes	Total
Total Member Months	559,987	5,786,238	6,346,225
PCP Visits per 1000 Members	158	176	174
Referral Visits per 1000 Members	48	53	52
Referral Encounters per 1000 Members	34	36	36
Radiology Encounters per 1000 Members	18	20	20
Lab Encounters per 1000 Members	58	65	64
MRI Encounters per 1000 Members	1	1	1

ER Visits per 1000 Members	11	12	12
Inpatient Days per 1000 Members	2	2	2
Admissions per 1000 Members	1	1	1
Prescriptions per 1000 Members	1	228	208
Generic Prescriptions per 1000 Members	0	145	132



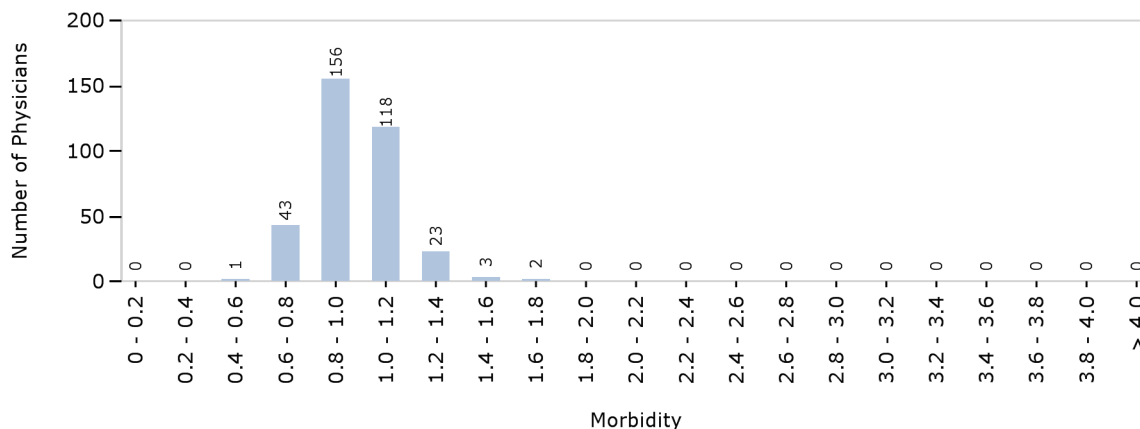
Physician		Number of Members:	390
Name:	Provider 8626541401	Member Months:	4,230
Secondary ID:	433362153	Member Panel Morbidity Index:	0.82
Primary ID:	8626541401	Peer Group	
		Peer Group Member Months:	748,775
Specialty:	Family Medicine	Peer Group Name:	II PCP (Family)
Key Statistics			
		Overall Quality Index:	0.86
		Overall Cost Index, Population:	0.97
Confidence Intervals for the Index			
		Overall Quality Index:	No data available
		Overall Cost Index, Population:	No data available

**Statistical significance of difference between  
index and peer group average: \* p<0.10; \*\* p < 0.05**

### Member Panel Analysis

Age Group	Female			Male			Total		
	PCP #	PCP %	Peers %	PCP #	PCP %	Peers %	PCP #	PCP %	Peers %
00-17	588	13.9%	8.6%	580	13.7%	8.7%	1,168	27.6%	17.4%
18-30	570	13.5%	10.8%	335	7.9%	7.4%	905	21.4%	18.2%
31-44	673	15.9%	17.8%	424	10.0%	14.9%	1,097	25.9%	32.7%
45-64	556	13.1%	16.0%	475	11.2%	14.2%	1,031	24.4%	30.2%
65-74	18	0.4%	0.5%	11	0.3%	0.7%	29	0.7%	1.2%
75+	0	0.0%	0.2%	0	0.0%	0.1%	0	0.0%	0.3%
Total	2,405	56.9%	53.9%	1,825	43.1%	46.1%	4,230	100.0%	100.0%

### Relative Morbidity Histogram



## Quality Measures

**As of the End of the Report Period**  
**(Members Must be Continuously Enrolled with Plan a Minimum of 12 Months)**

	Number of Quality Opportunities		Rates		Index
	With Compliance	Total	Provider Rate	Peer Rate	Quality Index
<b>Cardiology</b>					
HTN					
Pt(s) taking an ACE-inhibitor, angiotensin II receptor antagonist, diuretic, or aldosterone receptor blocker that had a serum K+ in last 12 rpt mos.	4	6	0.67	0.85	0.79
HTN					
Pt(s) taking an NSAID med.	16	18	0.89	0.92	0.96
HTN					
Pt(s) that had an annual physician visit.	18	18	1.00	0.98	1.02
HTN					
Pt(s) that had a serum creatinine in last 12 rpt mos.	9	18	0.50	0.82	0.61
<b>Endocrinology</b>					
Hyperlipidemia					
Pt(s) taking a statin-containing med, nicotinic acid or fibric acid derivative that had an annual serum ALT or AST test.	5	6	0.83	0.93	0.90
Hyperlipidemia					
Pt(s) w/ a LDL cholesterol test in last 12 rpt mos.	5	7	0.71	0.93	0.77
Hyperlipidemia					
Pt(s) w/ a HDL cholesterol test in last 12 rpt mos.	5	7	0.71	0.93	0.77
Hyperlipidemia					
Pt(s) w/ a triglyceride test in last 12 rpt mos.	5	7	0.71	0.93	0.77
<b>Neurology</b>					
Migraine					
Pt(s) w/ frequent use of acute meds.	4	4	1.00	0.95	1.05
Migraine					
Adult pt(s) w/ a CT or MRI study of the head that was not medically ind.	4	4	1.00	0.83	1.21
Migraine					
Adult pt(s) w/ an EEG that was not medically ind.	4	4	1.00	0.98	1.02
Migraine					
Pt(s) that received meperidine for management of a migraine.	4	4	1.00	0.99	1.01
<b>Otolaryngology</b>					
Pharyngitis (NS)					
Pt(s) treated w/ an abx for pharyngitis that had a Group A streptococcus test.	1	4	0.25	0.52	0.48
Sinusitis, Acute					
Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.	4	24	0.17	0.57	0.29
Sinusitis, Acute					
Pt(s) that had a sinus radiographic test.	63	63	1.00	0.98	1.02
Sinusitis, Acute					
Pt(s) that had a sinus CT or MRI test.	63	63	1.00	0.99	1.01
<b>Preventive and Administrative</b>					
Breast CA Scrn (NS)					

PCP Patterns of Care

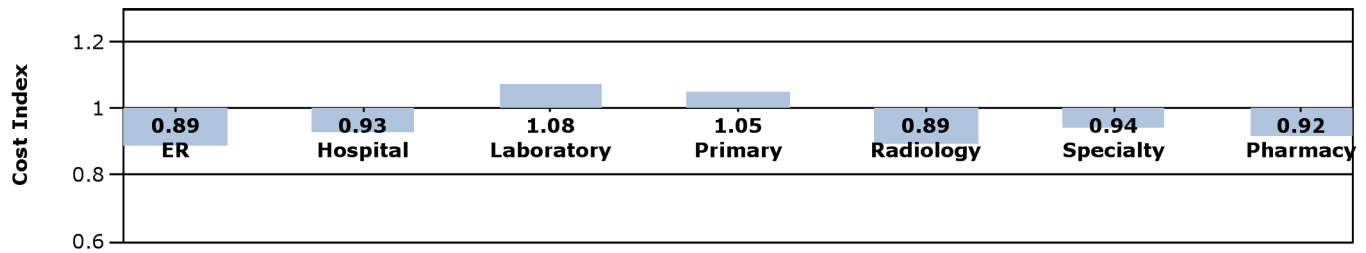
Provider Name : Provider 8626541401

Reporting Period : 1/1/2006 - 12/31/2007

Provider # : 8626541401

Pt(s) 42 - 69 yrs of age that had a screening mammogram in last 24 rpt mos.	23	46	0.50	0.68	0.74
Total	237	303	0.78	0.88	0.89

## Cost Index Summary, by Service Category



## Cost and Utilization Summary Measures

## Profiled Costs

	PMPM			Total
	PCP Actual	PCP Peers	PCP Index	PCP Actual
ER	\$8.28	\$9.32	0.89	\$35,019
Facility	\$6.78	\$7.78		\$28,694
Professional	\$1.50	\$1.54		\$6,325
Hospital Services	\$33.47	\$36.03	0.93	\$141,592
Inpatient Facility	\$13.34	\$11.19		\$56,421
Other Hospital Outpatient	\$4.05	\$4.93		\$17,150
Laboratory	\$7.29	\$6.77	1.08	\$30,849
Facility	\$0.23	\$0.65		\$964
Professional	\$7.06	\$6.12		\$29,884
Pharmacy	\$32.78	\$35.81	0.92	\$138,657
Anti-Infective Agents	\$6.94	\$4.78		\$29,355
Cardiovascular agents	\$2.93	\$6.33		\$12,378
Diagnostic agents	\$0.00	\$0.00		\$0
Primary Care Core	\$17.54	\$16.68	1.05	\$74,214
PCC Diagnostic	\$1.95	\$3.05		\$8,255
PCC Visits	\$15.59	\$13.63		\$65,959
Radiology	\$12.39	\$13.86	0.89	\$52,421
Facility	\$6.43	\$7.32		\$27,189
Professional	\$5.97	\$6.54		\$25,232
Specialty Care	\$44.71	\$47.40	0.94	\$189,114
Medical Specialty	\$14.30	\$14.71		\$60,468
Surgical Specialty	\$12.89	\$14.97		\$54,530
Total	\$156.47	\$165.88	0.94	\$661,867

Overall Cost Index: 0.97

## Utilization Rates Per 1,000 Members

Number of Encounters(Annualized per 1,000 Members)

	Actual	Peers	Index
Primary Care Visit Rate	2,505	2,640	0.95
Specialty Care Referral Rate	1,211	1,013	1.20
Visits per Specialist Referral	1,960	1,639	1.20
Radiology Procedure Rate	704	863	0.82
MRI Procedure Rate	101	57	1.77
Laboratory Procedure Rate	1,575	1,957	0.80
Overall Prescribing Rate	7,949	7,894	1.01
Generic Prescribing %	0%	0%	--
ER Visit Rate	152	156	0.97
Admits per 1000 Members	34	29	1.19
Days per 1000 Members	79	69	1.15
Average Length of Stay	2.33	2.42	0.96

## Episode Detail and Analysis

## Acute bronchitis

Total Specialty Episode Costs: \$17,628

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	95	\$185.56	\$99.40	\$5.20	\$0.00	\$5.69	\$1.98	\$70.04	\$3.26
Peers		\$155.58	\$59.57	\$12.77	\$1.16	\$3.73	\$5.50	\$59.86	\$13.00
Index			1.67	0.41	0.00	1.52	0.36	1.17	0.25

Encounters per 1000 Episode

Actual			1,343	563	0	32	74	1,968	16
Peers			1,110	544	29	40	95	1,778	38
Index			1.21	1.04	0.00	0.79	0.77	1.11	0.41

## Acute sinusitis

Total Specialty Episode Costs: \$15,152

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	71	\$213.41	\$74.31	\$31.54	\$0.70	\$0.00	\$4.38	\$95.05	\$7.44
Peers		\$181.45	\$61.45	\$20.65	\$2.30	\$5.36	\$6.41	\$81.47	\$3.79
Index			1.21	1.53	0.30	0.00	0.68	1.17	1.96

Encounters per 1000 Episode

Actual			1,094	972	46	0	99	2,408	14
Peers			1,125	843	61	19	118	1,967	10
Index			0.97	1.15	0.75	0.00	0.84	1.22	1.41

## Allergic rhinitis

Total Specialty Episode Costs: \$6,934

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	26	\$266.71	\$52.52	\$75.56	\$1.41	\$53.24	\$4.34	\$67.72	\$11.93
Peers		\$231.21	\$49.13	\$54.69	\$4.30	\$4.13	\$1.66	\$114.82	\$2.49
Index			1.07	1.38	0.33	12.89	2.62	0.59	4.80

Encounters per 1000 Episode

Actual			740	2,404	115	27	115	1,269	38
Peers			852	1,476	54	11	31	1,897	5
Index			0.87	1.63	2.14	2.54	3.69	0.67	8.22

## Asthma

Total Specialty Episode Costs: \$10,958

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	24	\$456.58	\$43.47	\$138.65	\$0.32	\$0.41	\$110.87	\$101.89	\$60.97
Peers		\$536.27	\$72.72	\$99.43	\$4.58	\$14.00	\$65.22	\$232.77	\$47.55
Index			0.60	1.39	0.07	0.03	1.70	0.44	1.28

Encounters per 1000 Episode

Actual			750	1,764	14	42	188	1,875	83
Peers			1,276	1,681	65	78	148	3,565	72
Index			0.59	1.05	0.21	0.53	1.27	0.53	1.16

## Hypertension

Total Specialty Episode Costs: \$12,844

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	28	\$452.00	\$89.49	\$35.38	\$12.01	\$26.72	\$0.00	\$174.02	\$114.38
Peers		\$618.19	\$131.12	\$98.44	\$12.03	\$44.03	\$63.89	\$225.65	\$43.03
Index			0.68	0.36	1.00	0.61	0.00	0.77	2.66

Encounters per 1000 Episode

Actual			1,512	845	129	35	0	6,053	53
Peers			2,348	1,295	156	108	97	6,469	38
Index			0.64	0.65	0.83	0.33	0.00	0.94	1.38

## Otitis media

Total Specialty Episode Costs: \$8,070

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	55	\$146.73	\$88.71	\$13.57	\$0.58	\$5.96	\$0.00	\$37.92	\$0.00
Peers		\$145.90	\$49.70	\$32.68	\$1.07	\$1.83	\$17.74	\$34.27	\$8.60
Index			1.78	0.42	0.54	3.25	0.00	1.11	0.00

Encounters per 1000 Episode

Actual			1,214	618	36	18	0	964	0
Peers			915	640	32	8	105	919	42
Index			1.33	0.97	1.13	2.34	0.00	1.05	0.00

## Tonsillitis, adenoiditis or pharyngitis

Total Specialty Episode Costs: \$10,604

Cost per Episode	# of Episodes	Total	Primary Care Core	Specialty Care	Laboratory	Radiology	Hospital	Pharmacy	ER
Actual	88	\$120.50	\$72.80	\$14.98	\$2.97	\$0.00	\$3.39	\$26.36	\$0.00
Peers		\$115.35	\$51.46	\$13.59	\$12.33	\$1.19	\$5.82	\$22.27	\$8.69
Index			1.41	1.10	0.24	0.00	0.58	1.18	0.00

Encounters per 1000 Episode

Actual			989	614	205	0	68	784	0
Peers			933	440	516	7	117	734	32
Index			1.06	1.39	0.40	0.00	0.58	1.07	0.00

## Member Quality Non-Compliance List

Member ID	Member Name	Date of Birth	Gender	Age	Condition	Case	Rule
3271608088		11/17/1950	M	56	Cardiology	HTN	Pt(s) taking an NSAID med.
9884071582		1/23/1963	F	43	Cardiology	HTN	Pt(s) taking an NSAID med.
0086037493		3/20/1952	F	54	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
1624688823		4/15/1936	F	70	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
2260086379		10/8/1950	F	56	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
3745588713		4/4/1981	F	25	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
3844477326		5/22/1959	F	47	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
5227550014		5/14/1963	M	43	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
7281857555		8/7/1949	M	57	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
8410712721		6/26/1951	M	55	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
9456013351		7/2/1970	M	36	Cardiology	HTN	Pt(s) that had a serum creatinine in last 12 rpt mos.
8410712721		6/26/1951	M	55	Endocrinology	Hyperlipidemia	Pt(s) taking a statin-containing med, nicotinic acid or fibric acid derivative that had an annual serum ALT or AST test.
7281857555		8/7/1949	M	57	Endocrinology	Hyperlipidemia	Pt(s) w/ a LDL cholesterol test in last 12 rpt mos.
8410712721		6/26/1951	M	55	Endocrinology	Hyperlipidemia	Pt(s) w/ a LDL cholesterol test in last 12 rpt mos.
7281857555		8/7/1949	M	57	Endocrinology	Hyperlipidemia	Pt(s) w/ a HDL cholesterol test in last 12 rpt mos.
8410712721		6/26/1951	M	55	Endocrinology	Hyperlipidemia	Pt(s) w/ a HDL cholesterol test in last 12 rpt mos.
7281857555		8/7/1949	M	57	Endocrinology	Hyperlipidemia	Pt(s) w/ a triglyceride test in last 12 rpt mos.
8410712721		6/26/1951	M	55	Endocrinology	Hyperlipidemia	Pt(s) w/ a triglyceride test in last 12 rpt mos.
1837455775		1/6/1989	F	17	Otolaryngology	Pharyngitis (NS)	Pt(s) treated w/ an abx for pharyngitis that had a Group A streptococcus test.
3746153816		12/21/1991	F	15	Otolaryngology	Pharyngitis (NS)	Pt(s) treated w/ an abx for pharyngitis that had a Group A streptococcus test.
4069133482		5/30/1989	F	17	Otolaryngology	Pharyngitis (NS)	Pt(s) treated w/ an abx for pharyngitis that had a Group A streptococcus test.

Reporting Period : 1/1/2006 - 12/31/2007

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1336806808		9/8/1989	F	17	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
1436401480		10/9/1964	F	42	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
1546105436		2/18/1959	M	47	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
2764823405		10/15/1988	F	18	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3043039116		9/17/1993	M	13	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3185421192		2/17/1993	F	13	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3193621837		4/5/1978	F	28	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3398047161		6/24/1971	M	35	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3588951399		2/13/1969	M	37	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3783497341		7/10/1962	F	44	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3814232514		12/7/1979	F	27	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
3966520016		12/24/1972	M	34	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
4259833676		4/7/1989	M	17	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
4483860253		5/8/1971	F	35	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
7457300534		5/9/1979	F	27	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
7741382982		7/15/1992	F	14	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
8889559767		11/4/1967	F	39	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.
9829462924		3/5/1972	F	34	Otolaryngology	Sinusitis, Acute	Pt(s) treated w/ an abx for acute sinusitis that received a first line abx.

## Report Introduction and Interpretation

Patterns of Care

Member Panel

Panel Morbidity - Peer Distribution

Quality

Cost and Use

Episode Detail

Member Quality Non-Compliance