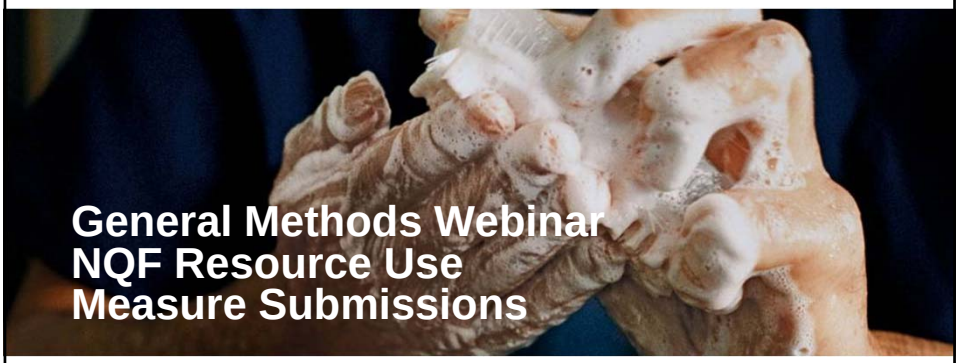

General Methods Webinar NQF Resource Use Measure Submissions

April 25, 2011

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Agenda

- Measure Submission List
- Common Steps in General Approach
- Common Clinical Logic – General Method
- Common Construction Logic – General Method
- Q&A

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Measures Submitted to NQF

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List of Measures Submitted (All Use Common Elements of the General Approach)

- Cycle 1
  - CHF
  - CAD
  - AMI
  - Stroke
  - Diabetes
  - Population Based Measures
- Cycle 2
  - COPD
  - Pneumonia
  - Hip/Pelvic Fracture
  - Low Back Pain
  - Asthma
  - Hip/Knee Replacement

- Ingenix Episode Treatment Groups (ETG) serves as the general clinical framework for all measures with the exception of Population-based (ERG) and Hip/Knee Replacement (PEG)

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Common Steps in General Approach

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General Approach – Common Steps

- Common Data Protocol Requirements
  - Preparation
  - Data included/excluded
  - Missing data
- Common Process for Defining Conditions - Episode Treatment Groups (ETG)
  - Groups individual medical and pharmacy services into unique episode of care defining a condition
  - Used to support episode-based measurement of cost of care
- Common Adjustment Strategies
  - Risk Adjustment
  - Stratification
  - Costing
- Common Reporting Methods
  - Flexible attribution techniques
  - Flexible peer group definitions
  - Common outlier methods
  - Common sample sizing/benchmarking

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Common Clinical Logic General Method

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Common Clinical/Construction Logic Method Clinical Framework

- Episode Treatment Groups (ETG) serves as a clinical framework for the submitted measures
  - Organizes healthcare services into unique episodes
  - Covers the clinical breadth of medicine, including acute and chronic concepts
  - (i) Identifies patients with conditions, (ii) starts condition episodes of care, and (iii) groups to each episode the services involved in diagnosing, managing and treating the condition
  - Identifies episode severity, considering comorbidity and condition status factors. Severity describes the relative resources required for a given episode
  - Identifies episode begin and end, and when an episode is complete
  - Supporting Documents – S.2. S.5 and S.8

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Common Clinical/Construction Logic Method Clinical Framework (cont'd)

- Key Steps in the Episode Building Process

1. Classify services for grouping:
   a. Assign Record Type
   b. Identify Anchor Records
   c. Assign Diagnosis Class
   d. Identify Diagnosis Code to Condition Relationships
   e. Identify Procedure Code to Condition Relationships
   f. Identify Drug to Condition Relationships

2. Build Episodes from "Anchor" Records

3. Group Non-Anchor Records to Episodes

4. Finalize the Episode
   -Identify comorbidities and complicating factors
   -Assign episode severity

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Clinical Framework Step 1a: Assign Record Type

- Record Type determined by Provider Type and Service Code (Procedure, Revenue or National Drug Code (NDC))
  – Provider specialty maps to one of three Provider Type values recognized by ETG:

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

- Assign Record Type

Using Provider Type and service code, a Record Type is assigned.

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

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Clinical Framework Step 1b: Identify Anchor Records

- Identify Anchor Records
  Anchor records are Management, Surgery and Facility services:

Record Type	Record Type Value	Anchor/ 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 **room & board** services.	Anchor
Pharmacy	A record for a prescription drug service.	Non-Anchor

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Clinical Framework Step 1c: Assign Diagnosis Class

- Grouping governed by diagnosis, revenue and procedure codes. Each code mapped to ETG concepts through clinical tables
- Diagnosis Class – Three classes of diagnosis codes:
  - "Specific" – codes that indicate a specific disease.
    - E.g. diagnosis code 428.0 (congestive heart failure, unspecified) is primary to CHF ETG
  - "Non-Specific" – codes that represent a disease or condition but may not be specific enough to indentify a single ETG
    - E.g. diagnosis code 389.0 (conductive hearing loss) is primary to Hearing Disorders and incidental to several other conditions
  - "Sign and Symptom" – codes that represent signs and symptoms of disease as opposed to a disease or condition
    - E.g. diagnosis code 338.2 (chronic pain) is eligible for many ETGs due to its generic nature

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Clinical Framework Step 1d: Identify Diagnosis Code to Condition Relationships

Primary/incidental

- Each diagnosis code is further ranked, based on its strength of association with a condition. A rank of "primary" or "incidental" is assigned to each diagnosis and condition combination, with a further ranking assigned to incidental relationships:
- Primary: The diagnosis defines that condition. Primary diagnosis codes can only be ranked as primary for a single ETG condition.
  - E.g. Diagnoses ranked as primary for CHF are 428.0 (Congestive Heart Failure), 428.1 (Left Heart Failure) and 428.2 (Systolic Heart Failure).
- Incidental: Diagnosis codes that are eligible for a condition but are not classified as primary. These diagnosis codes can be incidental to other conditions. Values of low, medium, or high are assigned for each diagnosis/condition.
  - E.G. Diagnosis ranked as incidental for CHF is 786.5 (Chest Pain)

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Clinical Framework Step 1e: Identify Procedure Code to Condition Relationships

- Procedure Codes – Help to identify the ETG to which a particular claim record can be assigned.
  - A Procedure may be valid for more than one ETG
  - Hierarchy of clinical appropriateness for the procedure/revenue code to each ETG in an eligibility table. Rhinoplasty Surgical Procedure example:

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

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Clinical Framework Step 1f: Identify Drug to Condition Relationships

- Based on the pharmacy code assigned to the service. The ETG methodology assigns each pharmacy service to a Drug Category Code (DCC).
  - The DCC describes the drug's active ingredients and route of administration.
  - DCCs then mapped to ETGs and define the relationships between a drug and a condition.

- There are some instances a DCC code may be eligible for more than one ETG. In these cases, the ETG methodology uses strength of the clinical relationship between the DCC code and the episode condition.
  - The lower the value is for Rank, the stronger the association between the DCC and the episode.

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Clinical Framework 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 or *phantom* clusters – when there are multiple diagnosis codes on the same anchor record
- Determine if episodes incur complications, comorbidities and significant surgery/treatment

- Anchors forms Clusters
  - Cluster is the basic unit of an episode
  - Each comprised of an anchor record and 0, 1 or more ancillary and pharmacy records.
  - Each episode consists of one or more clusters

Each cluster has only one anchor record
All records in a cluster have the same cluster number

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Clinical Framework Step 2a: Use Anchor Records to Start an Episode Using Specific and Non-Specific Diagnoses

- A service must be an anchor record to start an episode
- The service must also have a procedure code that is eligible for the ETG and an ICD-9 diagnosis code that is primary for the ETG.
  - E.g. - A cardiologist sees a patient and submits a claim record using the CPT procedure code 99212 (Office visit, established patient) with and ICD-9 diagnosis code 428.0 (congestive heart failure, unspecified).
- Note- a single anchor record can start more than one episode.
  - E.g. - An anchor record with a diagnosis and procedure code combination that is eligible for CHF will start a CHF episode. If that record also has a diagnosis and procedure code combination that is eligible for Hypertension, it will also start a Hypertension episode.

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Clinical Framework Step 2b: Group Anchor Records to an Episode Using Specific and Non-Specific Diagnoses

For Specific and Non-Specific Diagnosis codes:

- If the anchor record is only eligible for the open episode, group the anchor record to the episode.
  - In some cases, an anchor record can be eligible to join more than one episode.
- If the anchor record is eligible for the episode and another episode for the patient, tie breaking logic is used
  - Note that in the same way a single anchor record can start more than one episode a single anchor record can also extend more than one episode, however the anchor record itself can only be assigned to one episode, as described above.

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Clinical Framework Step 2c: Group Anchor Records to an Episode Using Sign and Symptom Diagnoses

For Sign and Symptom Diagnosis codes:

- If the anchor record is only eligible for the open episode, group the anchor record to the episode.
  - In some cases, an anchor record can be eligible to join more than one episode.
- If the anchor record is eligible for the episode and another episode for the patient, tie breaking logic is used

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Clinical Framework Step 3: Group Non-Anchor Records

- Step 3a: Group Non-Anchor Records other than Pharmacy to an Episode Using Specific and Non-Specific Diagnoses
  - Once an episode of CHF is started and anchor records have been grouped, non-anchor records can group to that episode. Consider specific and non-specific diagnoses on non-anchor records first.
  - Use the same logic as described in Step 2b above
- Step 3b: Group Non-Anchor Records other than Pharmacy to an Episode of Using Sign and Symptom Diagnoses
  - Use the same logic as described in Step 2c above
- Step 3c: Group Pharmacy Records to an Episode
  - Pharmacy services usually do not have ICD-9 diagnosis codes associated with them to use in grouping.
    - NDC to a DCC code (Drug Category Code) map (Step 1f)
    - DCC to ETG map
    - When a DCC code may be eligible for multiple open episodes, tie-breaking logic deployed.

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Clinical Framework Step 4: Finalize the Episode – Condition Status Factors and Comorbidities

Condition Status Factors

- Each episode evaluated to determine whether any Condition Status Factors observed
- Anchor records for the episode are evaluated using a comparison of their ICD-9 diagnoses with the diagnoses for the conditions status factors for the condition
  - E.g.- Condition Status Factors for CHF: Congestive heart failure, with diastolic heart failure and Rheumatic heart failure

Comorbidities

- Each episode evaluated to determine whether any Comorbidity Factors observed
- Anchor records outside the episode are evaluated using a comparison of their ICD-9 diagnoses with the diagnoses for the comorbidity factors for the condition
  - E.g. - Comorbidity groups for CHF include Pulmonary Tuberculosis, Ischemic Heart Disease and Pulmonary Embolism.

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Clinical Framework Step 4: Finalize the Episode – Severity

- Combination of Condition Status Factors, Comorbidities, Interactions between various Comorbidities and Patient Demographics are used to describe a "severity" score and level for an episode
  - Higher level of severity indicates an expectation of a higher level of resources required to diagnose, manage and treat an episode
  - The individual comorbidities further to final comorbidity factors used in calculating episode severity. Combines the effects of related comorbidities on severity.
  - In some cases, hierarchies used to limit final factors to those comorbidities within a related group that have the greatest impact on episode severity.
  - Each Condition Status Factor, Comorbidity, Interaction and Demographic is assigned a severity weight
- Severity Score - Sum the risk weights assigned for each of the relevant factors identified above. The sum of these weights is the overall severity score for the episode.
- Severity Level - Based on the severity score, the severity "level" indicates a categorical ranking of where the specific episode is relative to the population of all episodes of the same type.

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Clinical Framework Step 4: Finalize the Episode – Severity Score Example

Episode	ETG(Base Condition)	Complications			
1	Congestive HeartFailure				
		Comorbidities			
		80018	80173		
		Severity Level			
		1	2	3	4
		< 0.5	0.5 - 1.0	1.0 - 2.0	> 2.0
		Calculation of Relative Episode Severity			
		Indicator	Code	Description	Severity Weight
		Demographic	20	M55-64	0.2733
		Condition Status			
		Co-morbidity	80018	Diabetes	0.1513
			80173	Cardiomyopathy	0.7396
		Interaction			
		Total			1.1642

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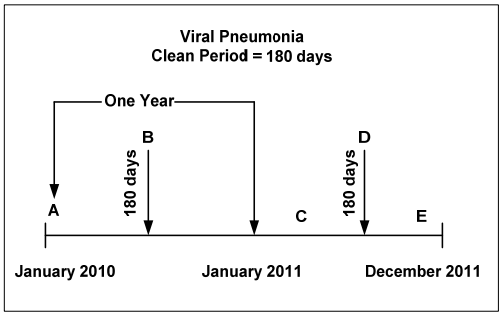
Clinical Framework Step 4 Finalize the Episode – Episode Completeness

- Episode Completeness in Service Data Environment



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.

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Common Construction Logic General Method

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Common Construction Logic Method Trigger/Ending Mechanisms

- Episodes are triggered by Anchor Records
  - Claim record indicating face-to-face physician encounter, surgical procedure, or facility confinement
  - These records most likely to be valid condition specification
- Ending Mechanisms
  - Flexible clean periods
  - Where interval of no services exceeds clean period time frame, the episode closes (complete)

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Common Construction Logic Method Redundancy

- ETG keeps related conditions separate
  - Specific hierarchy of rules coupled with eligibility with strengths of association for each diagnosis and procedure code to each ETG
  - Uniquely determines which episode the record groups to

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Resource Measures: General Guidelines

- Service Cost
  - Should reflect actual payments or cost associated with the service or standard priced
  - Financial amount should reflect all payments made
- Complete episodes
  - Use only complete episodes in resource use measurement
- Outlier episodes
  - Low outlier episodes should be excluded from resource use measurement
  - High outlier episodes should be included, but truncated or windsorized

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Resource-Use Categories Submitted

- Cost of Care per Episode
  - Total
  - Primary Care Core Services
    - Total
    - Visits
    - Other)
  - ER Services
  - Hospital Services
    - Total
    - Inpatient Acute
    - Inpatient Non-Acute
    - Other Outpatient)
  - Laboratory Services
  - Radiology Services
    - Diagnostic, Total
    - MRI, CT Scan Services
    - Other Diagnostic Services
  - Specialty Care Services
    - Total
    - Other Diagnostic Testing Services
    - Evaluation & Management Services
    - Medicine Services
    - Surgery Services
    - Other Services
  - Pharmacy Prescription Services

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Resource-Use Categories Submitted

- Utilization per 1,000 Episodes
  - Total Evaluation & Management Visits
    - PCP Visits
    - Specialist Visits
  - Specialist Referrals
  - ER Visits
  - Hospital Inpatient Admits, Acute
  - Hospital Inpatient Days, Acute
  - Laboratory Services
  - Radiology Services
    - Diagnostic, Total
    - MRI/CT Scan Services
    - Other Diagnostic Services
  - Pharmacy Prescription Services

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Resource Measure General Methods

- Cost of Care – Type of Service Categories
  - Based on mappings of procedure codes to categories (details in the submission)
- Encounters
  - Contact between individual and the health care system
  - Used for most utilization measures

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Question and Answers

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