



# eMeasure: M&M topics

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July 17, 2009

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# Outline

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- Overview of eMeasure specification
- Acts in DEF mood topics



# What is an eMeasure?

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- An “eMeasure” is a health quality measure encoded as a structured document per the Health Quality Measures Format (HQMF).
- Examples of statements formalized by the HQMF:
  - *Denominator = [1] Well child encounter; AND [2] 2-18yo during encounter.*
  - *Numerator = [1] Denominator; AND [2] Body Mass Index percentile recorded.*

(Sept 2009 Plenary Meeting:

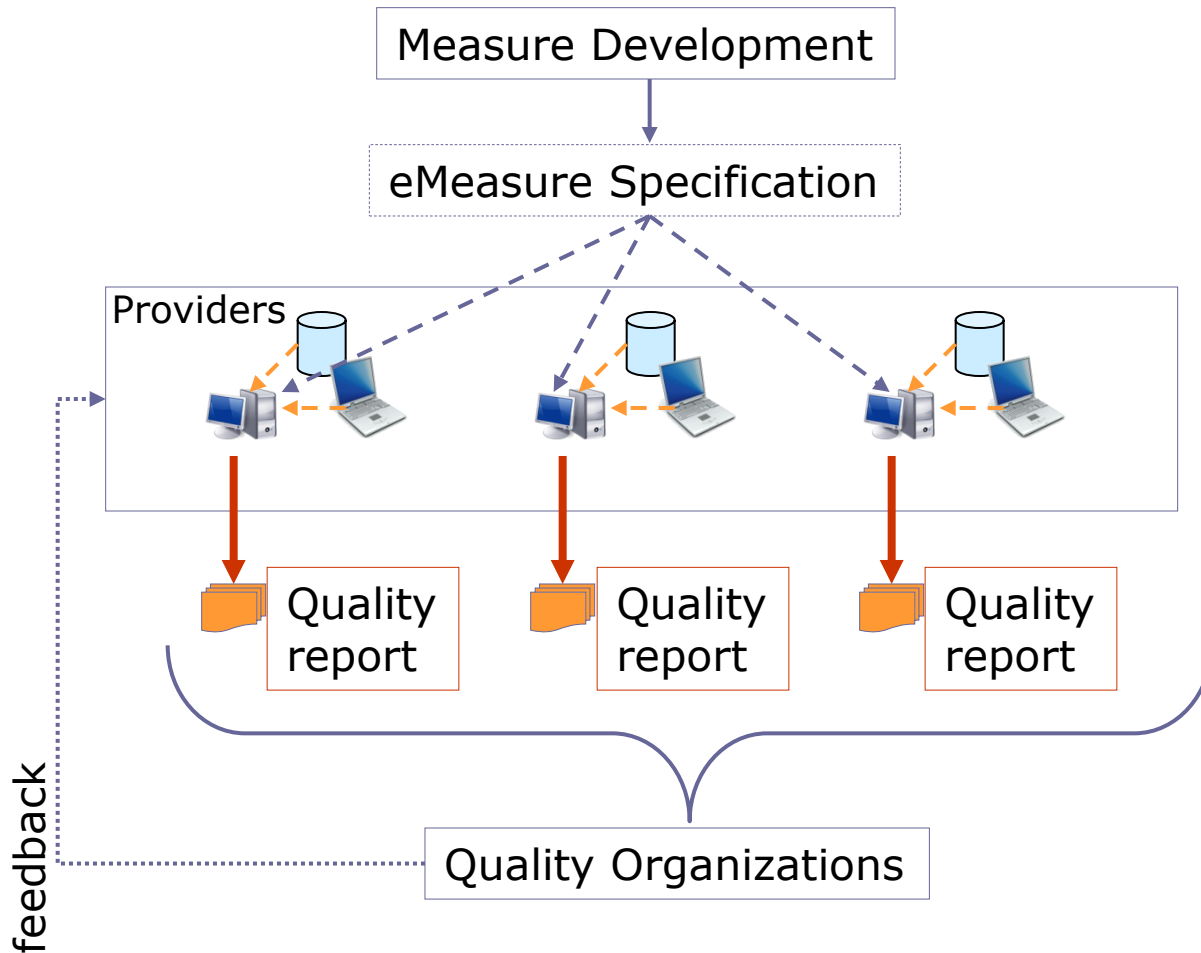
Keynote Session 3: The Role for Quality Measures

Janet Corrigan, PhD, President and CEO,

The National Quality Forum)



# Quality Framework



# HQMF encoding strategy

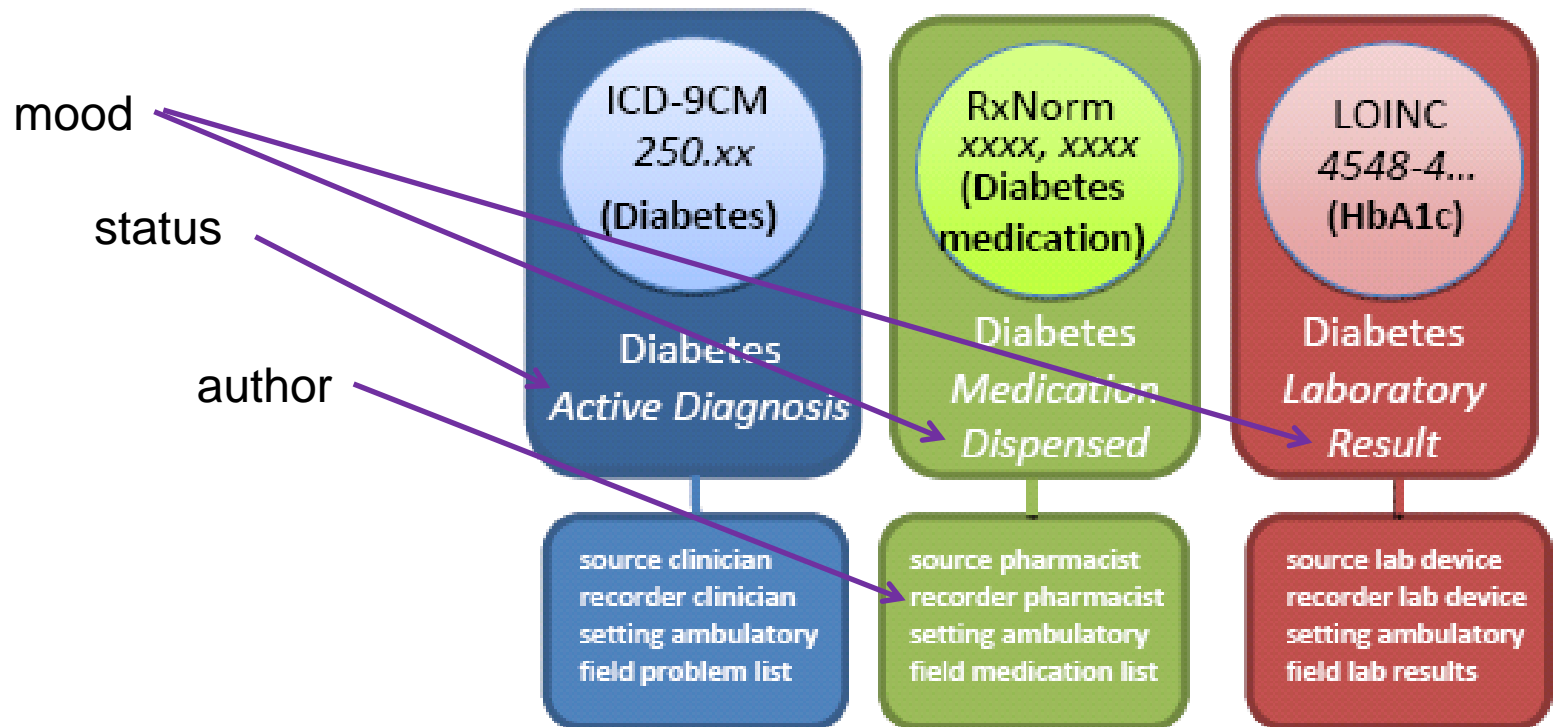
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- *Numerator= [1] Well child encounter; AND [2] 2-18yo during encounter; AND [3] Body Mass Index percentile recorded.*
  - **Data elements (base, measure-specific) are defined:** “encounter”, “completed face to face encounter event”, “principal encounter diagnosis is well child check”, “2-18yo during encounter”, “BMI percentile during encounter”.
  - **Measure-specific parameters are defined:** “encounter where 2-18yo AND principal dx is well child AND BMI percentile is recorded”.
- Trying to “define” these concepts as “Acts in DEF mood” have exposed a number of questions.



# HITEP II\* Data Elements

- documentCharacteristic (e.g. “inert”) attributes are required to fully define HITEP II data elements.



\*<http://www.qualityforum.org/projects/hitep2.aspx>

# Acts in DEF mood topics

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- What is the relationship between an Act in DEF mood, a Template, a Query, a Criterion, and a Detailed Clinical Model?
- For comparison, SNOMED CT uses a description logic formalism to define concepts:
  - Appendectomy (defined)
    - IsA: procedure
    - Procedure-site: appendix structure
    - Method: excision-action
  - Definitions enable subsumption testing



# Acts in DEF mood topics (cont)

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## ■ “Encounter”

- Definition: An interaction between a patient and care provider(s) for the purpose of providing healthcare-related service(s).

## ■ Questions

- ActMood “DEF”’s definition: A definition of a service (master). [In other words, “if, in my system, I have something that contains the non-documentCharacteristic components of an Act in DEF mood, then I can infer that it is a kind of that Act”].
- How do we define documentCharacteristic components (e.g. encounter event, physician-authored problem)?

```
<!-- Encounter -->  
<encounter classCode="ENC" moodCode="DEF">  
</encounter>
```





# Acts in DEF mood topics (cont)

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## ■ “Completed face to face encounter event”

- Definition: An encounter that actually occurs, where patient and provider are physically together in a single encounter location.

## ■ Questions

- How would one define an encounter event?
- How would one define a face to face encounter?
- How would one link to an externally versioned list of face to face encounter codes?
- How would one define “completed”?

```
<!-- Face to face encounter event -->  
<encounter classCode="ENC" moodCode="EVN">  
  <code displayName="Face2FaceEncounterCodeList"/>  
</encounter>
```



# Acts in DEF mood topics (cont)

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- “Completed face to face encounter event where principle diagnosis is X”
  - Definition: A completed face to face encounter event where the principle diagnosis is X.
- Questions
  - How do we interpret nested mood codes?
  - How do we distinguish between “diagnosis is exactly X” vs. “diagnosis is X or any subtype of X”?

```
<!-- Face to face encounter event where principal diagnosis is X -->
<encounter classCode="ENC" moodCode="EVN.CRT">
  <code code="Face2FaceEncounter"/>
  <sourceOf typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN.CRT">
      <code code="8319008" codeSystem="2.16.840.1.113883.6.96"
        displayName="Principle diagnosis"/>
      <value xsi:type="CD" displayName="X"/>
    </observation>
  </sourceOf>
</encounter>
```



# Conclusions

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- Very complicated to “define” something as an Act in DEF mood
  - Lack of guidelines
  - Inability to define an object’s documentCharacteristic components (e.g. mood, status, authorship).
- Considerations (see examples on following slides)
  - Define all acts as they would occur (including documentCharacteristic components). Use the section context to know that something is being defined.
  - Wrap everything in DEF. Components of a DEF don’t use DEF (except where mood agnostic)
  - Use <derivationExpr> to constrain documentCharacteristic components.



# Considerations

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- Define all acts as they would occur (including documentCharacteristic components). Use the section context to know that something is being defined.
  
- “Completed inpatient encounter event”

```
<!-- Completed inpatient encounter event -->  
<encounter classCode="ENC" moodCode="EVN">  
  <code displayName="inpatient"/>  
  <statusCode code="completed"/>  
</encounter>
```



# Considerations (cont)

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- Wrap everything in DEF. Components of a DEF don't use DEF (except where mood agnostic).
  
- “Completed inpatient encounter event”

```
<!-- Completed inpatient encounter event -->
<observation classCode="OBS" moodCode="DEF">
  <code code="ASSERTION"/>
  <value xsi:type="CD"
    displayName="completed inpatient encounter event"/>
  <sourceOf typeCode="COMP">
    <encounter classCode="ENC" moodCode="EVN">
      <code displayName="inpatient"/>
      <statusCode code="completed"/>
    </encounter>
  </sourceOf>
</observation>
```



# Considerations (cont)

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- Use <derivationExpr> to constrain documentCharacteristic components.

```
<!-- BMI Percentile -->
<observation classCode="OBS" moodCode="DEF">
  <id root="1.3.4.5.6"/>
  <code code="111111" codeSystem="2.16.840.1.113883.6.96" displayName="BMI %"/>
</observation>
```

```
<!-- BMI percentile measured -->
<observation classCode="OBS" moodCode="DEF">
  <id root="2.3.4.5.6"/>
  <code code="111111" codeSystem="2.16.840.1.113883.6.96"
    displayName="BMI % measured"/>
  <derivationExpr>BMIPercentile.statusCode.code = "completed"</derivationExpr>
  <sourceOf typeCode="DRIV">
    <localVariableName>BMIPercentile</localVariableName>
    <!-- BMI Percentile -->
    <observation classCode="OBS" moodCode="DEF">
      <id root="1.3.4.5.6"/>
    </observation>
  </sourceOf>
</observation>
```