eMeasures: Many Differences
eMeasures (eCQM) “Ecosystem 1.0”

- QDM
- MAT
- eCQMs
- STANDARDS
  - HQMF
  - CDA
  - QRDA
  - RIM
- NQF MAP Rules
- Cypress
- CEHRT
- Reporting Attestation
eMeasures (eCQM) “Ecosystem 2.0”

- QDM
- VSAC
- MAT
- eCQMs
- STANDARDS
  - HQMF
  - QRDA
  - CDA
  - RIM
- NQF MAP Rules
- USHIK
- Cypress
- PopHealth
- Reporting
- Attestation or QRDA I
- CEHRT
Speaker Introductions

Julia Skapik, MD
Medical Officer, HHS / ONC

Kendra Hanley, Project Manager
Measure Implementation & Informatics AMA

Rute Martins, Associate Project Director,
eMeasures, The Joint Commission

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Questions/Follow-Up

Thank You!

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The Current and Future State of eCQM Development

Julia Skapik, MD, MPH
Office of the National Coordinator for Health IT

February 23, 2014
Anticipating the Impact on Providers

HAD TO SCROLL

to select my birthyear
Meaningful Use Stage 2

- In May 2013, EHR Incentive Program announced it had surpassed its 2013 goals by achieving more than 80% of hospitals and more than 50% of providers with meaningful EHR use.
- Stage 2 included 29 hospital (EH) and 64 outpatient (EP) electronic clinical quality measures (eCQMs).

<table>
<thead>
<tr>
<th>eMeasure Title</th>
<th>Breast Cancer Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>eMeasure Identifier (Measure Authoring Tool)</td>
<td>125</td>
</tr>
<tr>
<td>NQF Number</td>
<td>0031</td>
</tr>
<tr>
<td>Measurement Period</td>
<td>January 1, 20xx through December 31, 20xx</td>
</tr>
<tr>
<td>Measure Steward</td>
<td>National Committee for Quality Assurance</td>
</tr>
<tr>
<td>Measure Developer</td>
<td>National Committee for Quality Assurance</td>
</tr>
<tr>
<td>Endorsed By</td>
<td>National Quality Forum</td>
</tr>
</tbody>
</table>

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Measure Scoring
- Proportion

Measure Type
- Process

Stratification
- None

GUID: 19783c1b-4fd1-46c1-8a96-a2f192b97ee0
Initial Performance of eCQMs

- High rate of critical errors at initial measure completion leading to excessive rework
- Not standardized or harmonized
- Many paper and claims-based measure content could not be specified
- Standards underpinning program still in DSTU
- Standards for eCQMs differ from clinical decision support
- Little workflow testing or wild-type data testing
eCQM Development Process Kaizen
Current HHS/ONC Improvements to eCQM Development

• LEAN process improvement and increased coordination across agencies/programs
• Agile software development and tool upgrades
• Value Set Authority Center
• Testing throughout the process
• Vendor and provider feedback before release
• Ongoing standards improvements
Welcome to the NLM Value Set Authority Center (VSAC)

⚠️ The VSAC Authoring Tool will be down for scheduled maintenance from 8:00 AM until 4:00 PM EST on Dec. 8th, 2013.

For VSAC announcements, please subscribe to the VSAC Updates listsery.

The Value Set Authority Center (VSAC) is provided by the National Library of Medicine (NLM), in collaboration with the Office of the National Coordinator for Health Information Technology and the Centers for Medicare & Medicaid Services.

The VSAC has published the annual update for the 2014 Eligible Hospital Clinical Quality Measure (CQM) Value Sets. The update includes revised value sets to address deleted and remapped codes in the latest terminology versions, as well as new codes for addressing CQM logic corrections and clarifications.

The VSAC provides downloadable access to all official versions of vocabulary value sets contained in the 2014 Clinical Quality Measures (CQMs). The value sets in the VSAC describe the specific populations included and excluded in order to properly calculate each 2014 CQM. Each value set consists of the numerical values and human-readable names, drawn from standard vocabularies such as SNOMED CT® and ICD-10-CM, which are used to define clinical concepts used in clinical quality measures (e.g., patients with diabetes, clinical visit).

The content of the VSAC will gradually expand to incorporate value sets for other use cases, as well as for new measures and updates to existing measures. Viewing and/or downloading value sets requires a free Unified Medical Language System® Metathesaurus License, due to usage restrictions on some of the codes included in the value sets.

The Data Element Catalog contains the complete list of 2014 CQMs and value set names.

What services does the Value Set Authority Center offer?

The Value Set Authority Center (VSAC) currently serves as the authority and central repository for the official versions of value sets that support Meaningful Use 2014.
<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>229676007</td>
<td>Language-related cognitive disorder (disorder)</td>
<td>Active</td>
</tr>
<tr>
<td>300.11</td>
<td>Conversion disorder</td>
<td>Active</td>
</tr>
<tr>
<td>300.15</td>
<td>Dissociative disorder or reaction, unspecified</td>
<td>Active</td>
</tr>
<tr>
<td>300.12</td>
<td>Dissociative amnesia</td>
<td>Active</td>
</tr>
<tr>
<td>300.13</td>
<td>Dissociative fugue</td>
<td>Active</td>
</tr>
<tr>
<td>308.1</td>
<td>Predominant disturbance of consciousness</td>
<td>Active</td>
</tr>
<tr>
<td>437.7</td>
<td>Transient global amnesia</td>
<td>Active</td>
</tr>
<tr>
<td>315.31</td>
<td>Expressive language disorder</td>
<td>Active</td>
</tr>
<tr>
<td>760.02</td>
<td>Transient alteration of awareness</td>
<td>Active</td>
</tr>
<tr>
<td>294.0</td>
<td>Amnestic disorder in conditions classified elsewhere</td>
<td>Active</td>
</tr>
<tr>
<td>799.51</td>
<td>Attention or concentration deficit</td>
<td>Active</td>
</tr>
</tbody>
</table>
**0435: Discharged on Antithrombotic Therapy**

**Description:**
Ischemic stroke patients prescribed antithrombotic therapy at hospital discharge

**Initial Patient Population:**
- **✓ AND:** ✓ Patient Characteristic: Birthdate: birth date >= 18 years starts before start of ✓ Occurrence: Encounter, Performed: Inpatient Encounter
- **✓ AND:** ✓ Occurrence: Encounter, Performed: Inpatient Encounter (Length of Stay <= 120 days)
- **✓ AND:** ✓ Occurrence: Encounter, Performed: Inpatient Encounter (Discharge Date/Time) during “Measurement Period”
- **✓ AND:**
  - ✓ OR: ✓ Diagnosis, Active: Hemorrhagic Stroke (Ordinal: Principal Diagnosis) starts during ✓ Occurrence: Encounter, Performed: Inpatient Encounter
  - ✓ OR: ✓ Diagnosis, Active: Ischemic Stroke (Ordinal: Principal Diagnosis) starts during ✓ Occurrence: Encounter, Performed: Inpatient Encounter

**Denominator:** None

**Numerator:**
- **✓ AND:** ✓ Medication, Discharge: Antithrombotic Therapy during ✓ Occurrence: Encounter, Performed: Inpatient Encounter

**Denominator Exceptions:**
- **✗ AND:**
  - ✗ OR: ✗ Medication, Order: Antithrombotic Therapy (Not Done: Medical Reason) starts during Occurrence: Encounter, Performed: Inpatient Encounter
  - ✗ OR: ✗ Medication, Order: Antithrombotic Therapy (Not Done: Patient Refusal) starts during Occurrence: Encounter, Performed: Inpatient Encounter

**Denominator Exclusions:**
- **✗ AND:**
  - ✗ OR: ✗ Occurrence: Encounter, Performed: Inpatient Encounter (Reason: Carotid Intervention)
  - ✗ OR: ✗ Occurrence: Encounter, Performed: Inpatient Encounter (Discharge Status: Discharge To Another Hospital)
  - ✗ OR: ✗ Occurrence: Encounter, Performed: Inpatient Encounter (Discharge Status: Left Against Medical Advice)
  - ✗ OR: ✗ Occurrence: Encounter, Performed: Inpatient Encounter (Discharge Status: Discharge Date/Time) during “Measurement Period”

**Total Coverage:** 21%

**TEST PATIENTS**

- **Fails:** 2/3

**FAIL**
- Hemorrhagic No Meds
- Ischemic No Meds

**PASS**
- Ischemic With Meds

**Population** | **Expected** | **Actual**
---|---|---
IPP | 1 | 1
DENOM | 1 | 1
NUMER | 1 | 1
DENECEX | 0 | 0
DENEX | 0 | 0
Stroke guidance regarding carotid intervention

Type: Intent/Governance
Priority: Major
Component/s: None
Labels: None
Solution: The missing or inaccurate data guidance initially listed in the eligible hospital (EH) chart-based measures was carried over into the eCQM per the measure steward's original direction. This guidance has been removed from Stroke measures NQF/CMS: 0441/102, 0435/104, 0436/71, 0437/91, 0438/72, 0439/105, and 0440/107.

2014 EH Measures: CMS102v1/NQF441, CMS104v1/NQF435, CMS105v1/NQF439, CMS107v1/NQF440, ...

Description:
The logic for Carotid Interventions seems as though there is potential for encounters to be excluded that are not intended to be excluded. Recommend: Standardize the logic across all measures.

Activity

There are no comments yet on this issue.
Quality Improvement Pathway

- **Research**
  - What’s ACTUALLY happening

- **Guidelines**
  - What SHOULD happen

- **Clinical Decision Support**
  - What WILL happen

- **Quality Measures**
  - What DID happen
Future HHS/ONC Improvements to eCQM Development

• Build measure concepts on existing system data elements whenever possible
  – Reduces added fields and steps
• Change static value sets for dynamically updated content
• Increase crowdsourcing of data elements, clinical, and technical design
• Increase workflow mapping and testing in varied settings
Future HHS/ONC Improvements to eCQM Development

- National Test-bed to evaluate feasibility, reliability, and validity prior to release
- Allow providers and patients to use federal tools to make their own quality metrics
- Pair clinical decision support and registry data with quality measurement across all settings
- Engage patient data, other care team members, and additional care settings
The Future: Interoperability and Patient Engagement
Questions and Feedback?

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Julia.skapik@hhs.gov
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• Contact us at: [onc.request@hhs.gov](mailto:onc.request@hhs.gov)

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• Visit the [ONC Newsroom](http://www.healthit.gov/newsroom) for news and announcements
The Future of Measure Development

February 23, 2014

Kendra Hanley, MS

American Medical Association-convened Physician Consortium for Performance Improvement® (PCPI®)

DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.
Conflict of Interest Disclosure

Kendra Hanley, MS

Has no real or apparent conflicts of interest to report.
Learning Objectives

• Describe the electronic clinical quality measure development and endorsement process

• Explain the difference between retooled and de novo measures

• Identify the industry tools for electronic measure development and issues tracking and how these are utilized
Overview

- What is the PCPI?
- Describe quality measure development process
- Share approaches for future measure development
  - De novo eMeasures
AMA-convened Physician Consortium for Performance Improvement® (PCPI)®

• Convened and staffed by AMA
• More than 190 member organizations
  – Over 100 national specialty and state medical societies
  – Medical boards
  – Ancillary health professional associations
  – Experts in QI and measurement (e.g., QIOs, IHI, TJC, NCQA)
  – Government (e.g., AHRQ, CMS)
• Developed many frameworks and tools for measure development, specification and testing of quality measures
PCPI Quality Measures

• Current measures portfolio
  – Measurement sets in 45+ clinical areas and preventive care
  – 275+ individual measures
• Focus on physician-level quality measures
• Process measures, intermediate outcome measures, overuse, outcome measures
• Measures included in CMS PQRS program since its inception 2007
• Federally funded contracts
  – Development, eSpecification, maintenance, & testing of eCQMs
• PCPI Measures included in Meaningful Use Stage 1, 2 for eligible professionals (EPs) CQM reporting
Changes in Measurement Environment

<table>
<thead>
<tr>
<th>Stakeholder demand for measures is changing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Focused interest in structural measures (EHRs)</td>
</tr>
<tr>
<td>• Less interest in process measures</td>
</tr>
<tr>
<td>• More interest in clinical outcome measures</td>
</tr>
<tr>
<td>• Growing interest in PRO measures</td>
</tr>
<tr>
<td>• Measures that can be used across multiple settings</td>
</tr>
<tr>
<td>• NQF-convened MAP identified many measure gaps</td>
</tr>
</tbody>
</table>
### Measure Development Process

| Identify topic area          | • National Quality Strategy gap areas  
|                            | • Review of existing measures  
|                            | • Opportunity for improvement? |
| Convene multidisciplinary expert panel | • Clinical and methodological expertise  
|                                | • Health IT stakeholders |
| Consider relevant clinical guidelines | • Evidence ranking  
|                                | • Strength of recommendation statements |
Measure Development Process (cont’d)

Specifications Drafted
- Developed concurrently as measure concepts formed
- Feasibility as it relates to measure design influences end product
- Tools used for eCQM development
- Modeling methodology

Feasibility Testing
- Can measure be implemented as drafted?
- If implemented, will measure results be comparable across sites?
- Feasibility falls on a continuum

Public comment
- Opportunity for stakeholders to react to draft measure and specifications
- Typically 30 day period
**Measure Development Process (cont’d)**

<table>
<thead>
<tr>
<th>Step</th>
<th>Details</th>
</tr>
</thead>
</table>
| Revise measures based on public comments  | • Expert workgroup considers comments  
• Determines if revisions warranted   |
| Reliability Testing                       | • Are the measure results repeatable?                                  |
| Validity Testing                          | • Are we measuring what we intend to measure?                         |
| Finalize measures                         | • Approval process  
• Final Specifications developed                                            |
| Measure Implementation                    | • Inclusion in national programs  
• Use in a practice for internal QI                                      |
The Ecosystem

Image courtesy of www.quia.com
eMeasures for the Future: A Paradigm Shift

Conceptualize a measure for use in Health IT systems

Innovate through development of desired measure concepts

Standardize using available industry tools
# Specifications Development—de novo measures

<table>
<thead>
<tr>
<th>Define</th>
<th>• Key to specifications—definition of the data elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translate</td>
<td>• Measure statement into its data components</td>
</tr>
<tr>
<td></td>
<td>• Categorize information according to Quality Data Model</td>
</tr>
<tr>
<td>Identify</td>
<td>• Timing constraints of data elements</td>
</tr>
<tr>
<td></td>
<td>• Relationships between data elements included in measure</td>
</tr>
<tr>
<td>Develop</td>
<td>• Clinical vocabularies to identify the data elements</td>
</tr>
<tr>
<td></td>
<td>• Develop value sets</td>
</tr>
<tr>
<td>Combine</td>
<td>• Build logic structure to identify measure components</td>
</tr>
<tr>
<td></td>
<td>• IPP, D, N, exclusions and exceptions</td>
</tr>
</tbody>
</table>
Thank You!

kendra.hanley@ama-assn.org
Conflict of Interest Disclosure

Rute Martins, MS

Has no real or apparent conflicts of interest to report.

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These slides are current as of 2/23/2014.
The Joint Commission reserves the right to change the content of the information, as appropriate.
Learning Objectives

• Describe the electronic clinical quality measure development and endorsement process

• Explain the difference between retooled and de novo measures

• Identify the industry tools for electronic measure development and issues tracking and how these are utilized
The Joint Commission

- Established in 1951
- Accredits 20,000+ healthcare organizations in the US
- Independent, not-for-profit
- Mission:

  To continuously improve health care for the public, in collaboration with other stakeholders, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value.
Performance Measurement at The Joint Commission

What Makes a Good Measure:

• Important
• Evidence-based
• Precisely defined and specified
• Valid and reliable
• Useful and usable
• Under provider control
• Accessible

Measure Uses:

• Support hospitals in performance improvement
• Inform accreditation process
• National reporting and trending
De novo Measure Development Process

1. Review Literature
2. Establish Advisory Panel
3. Identify Candidate Measures
4. Develop Measure Profiles
5. Public/Stakeholder Comment
6. Develop Measure Specifications
7. Conduct Feasibility Testing
8. Conduct Validity/Reliability Testing
9. Submit for Endorsement
Before detailed measure specs can be developed

• Body of evidence is assessed to:
  – Develop measurement framework (domains of care)
  – Identify interventions with solid evidence of effectiveness, benefit and cost-effectiveness

• Candidate measures and identified and selected:
  – Stakeholder involvement throughout the development process – Technical Advisory Panel (TAP)
  – Call for measures
  – Measure profiles for public comment
Electronic Specifications Development

1. Define measure information and metadata
   - Metadata
2. Identify individual concepts
   - QDM datatype
3. Specify concepts in standard vocabularies
   - Value sets
4. Create eMeasure logic
   - Population criteria

Data criteria
eCQM development ecosystem

- Measure Authoring Tool
- Value Set Authority Center
- Quality Data Model
- Standard Vocabularies
- Health Quality Measures Format
- Quality Reporting Document Architecture
- Clinical Document Architecture
Measure Testing

Feasibility
- Availability of structured data
- Workflow fit
- eCQM framework constraints
- Complexity of logic

Validity and Reliability
- Data capture patterns can have strong impact on data quality
- Sensitivity and specificity
- Accuracy and precision

- What is a representative sample of EHR installations for testing?
- How does feasibility impact reliability and vice-versa?
Measure retooling

- Starting with fully developed measure constructs designed for a different data collection methodology
- Concepts are often too sophisticated for direct data extraction from EHR
- Retooled measures are new measures: feasibility, reliability and validity do not carry over
Retooling overhaul

- Existing measure did not lose value:
  - Selecting carefully: not all measures should be eCQMs
  - Re-engineering measure constructs: rethink and restructure constructs
  - Simplifying and eliminating concepts where possible

The de novo promise

- No “stigma” of comparison to chart-abstracted measures
- More flexibility in construct design
- Not the be all and all answer:
  - Cannot escape the existing evidence
  - Feasibility and validity will continue to be a trade-off
Finding a balance

Intrusive for EHR users, resulting in poor data quality or mobs

Clinically meaningful but EHRs aren’t there yet (e.g. natural language processing)

New measures (but are they all important?)

eCQM requirements
Sweet spot
EHR capability
Clinical workflow
Questions?

Thank You!

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The Joint Commission

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