Electronic Clinical Quality Measures 101

Introduction to electronic clinical quality measures (eCQMs)

September 22, 2016

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Agenda

• A little history
• What is an electronic clinical quality measure (eCQM)?
• How is an eCQM different from other clinical quality measures?
• What does this mean for you?
• Questions
A little history
Clinical Quality Measure Collection in CMS
Quality Reporting Programs

• Manual abstraction of the patient record, for example
  – Data entered into the CMS Abstraction & Reporting Tool (CART)
  – Data entered into a data submission vendor’s tool
  – Data entered into a provider’s submission tool
  – Data entered into National Healthcare Safety Network (NHSN)
  – Data entered onto a claim form – quality data codes (QDCs)
  – Data entered into a registry
  – Data entered into Consolidated Renal Operations in a Web-Enabled Network (CROWNWeb)
  – Data entered into The Inpatient Rehabilitation Validation and Entry System (JiRVEN) – Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI)

• Regular claims submission
Chart-Abstracted Measures

- **Chart-Abstracted Clinical Quality Measures**
  - Require hospitals and clinicians to manually review patient records
  - Sampling of eligible patient records is the norm
  - Require human intervention and interpretation of documentation
  - Allow more flexibility in data gathering than eCQMs
• Health Information Technology for Economic and Clinical Health Act (HITECH) required reporting of quality measure data via certified electronic health record technology (CEHRT)

• 113 existing National Quality Forum (NQF)-endorsed measures “retooled” into eCQMs
  – 29 Adopted by electronic health record (EHR) Incentive Program for eligible hospitals (EHs) and critical access hospitals (CAHs)
  – 64 Adopted by EHR Incentive Program for eligible professionals (EPs)
  – Most of the retooled measures were developed from chart-abstracted measures, but some from claims-based and survey-based
Enter eCQMs (2 of 2)

- CMS allowed attestation of eCQM results in the providers 1st year(s) of participation
- Submission pilots in 2013 (2011 specifications)
- Submission pilots in 2014 (2014 specifications)
- Annual updates to eCQMs

eCQMs not just for the EHR Incentive Program – now incorporated into Physician Quality Reporting System (PQRS), Comprehensive Primary Care (CPC), and Hospital Inpatient Quality Reporting
  – Also coming to the Quality Payment Program (QPP) – Merit-based Incentive Payment System (MIPS) and Alternate Payment Model (APMs)
What is an eCQM?
What is an eCQM?

- An eCQM is a clinical quality measure specified in the Health Quality Measure Format (HQMF) plus
- HQMF is a Health Level 7 (HL7) standard for representing a clinical quality measure as an electronic document (Extensible Markup Language [XML] format)
- Ideally, the HQMF provides for measure consistency and unambiguous interpretation
- HQMF provides the syntax (document structure), but does not specify where in the EHR the data must be/can be found
Two types:
• Re-specified eCQM
  – eCQM created from a CQM developed for other data sources / data abstraction methods
• De novo eCQM
  – A new eCQM not based on an existing measure. De novo eCQMs are specified as eCQMs from their inception using the Measure Authoring Tool (MAT)
How is an eCQM different?
CQM and eCQM Differences

- eCQMs require the use of standards and tools
- An EHR is the primary source of data for an eCQM
- Data in the EHR should be captured as part of regular workflow
- Other electronic data may be captured, e.g., from a laboratory information system
- The logic must be explicitly stated
- eCQMs require additional steps to map measure data elements to corresponding information model components and standard terminologies to assemble the data criteria
eCQM Logic Snippet

- **Initial Population =**
  - AND: Age >= 18 year(s) at: Occurrence A of $EncounterInpatientNonElective
  - AND:
    - OR: Intersection of:
      - Occurrence A of $EncounterInpatientNonElective
      - "Encounter, Performed: Non-Elective Inpatient Encounter (principal diagnosis: Ischemic Stroke)"
    - OR: Intersection of:
      - Occurrence A of $EncounterInpatientNonElective
      - "Encounter, Performed: Non-Elective Inpatient Encounter (principal diagnosis: Hemorrhagic Stroke)"

- **Denominator =**
  - AND: Initial Population
  - AND: Intersection of:
    - Occurrence A of $EncounterInpatientNonElective
    - "Encounter, Performed: Non-Elective Inpatient Encounter (principal diagnosis: Ischemic Stroke)"
  - AND: Union of:
    - "Procedure, Performed: Atrial Ablation" starts before start of Occurrence A of $EncounterInpatientNonElective
    - "Diagnosis: Atrial Fibrillation/Flutter" starts before or concurrent with end of Occurrence A of $EncounterInpatientNonElective
  - Intersection of:
    - Occurrence A of $EncounterInpatientNonElective
    - "Encounter, Performed: Non-Elective Inpatient Encounter (diagnosis: Atrial Fibrillation/Flutter)"
Standards to Create an eCQM

• Quality Data Model (QDM)
  – Provides the grammar to express eCQMs
  – Each QDM element is composed of a category of information, a datatype (or context of use), and a value set
  – The value set defines the specific instance of the category by assigning a set of values (or codes)
  – Existing value sets are available in the Value Set Authority Center (VSAC)
  – Currently includes the measure logic

• Value sets are created in the VSAC using standard terminologies
QDM Element Structure

Category

Value Set

Code System
Code

Data Type

Attribute

Laboratory Test

High Density Lipoprotein

LOINC
14646-4
18263-4
2085-9

Laboratory Test, Performed

result < 40 mg/dL

Source – Quality Data Model v 4.2
eCQMs

- eCQMs rely on standard terminologies to capture data for quality measurement
  - Systems need to support terminology standards such as LOINC, RxNorm, and SNOMED CT
  - Terminology and data element requirements may necessitate EHR vendors to redesign and reconfigure workflows and data entry mechanisms to meet the measure collection requirements

- Terminology differences, which define the numerators, denominators, exclusions, and exceptions, create differences in the populations of chart-abstracted measures as compared with eCQMs
Data Criteria (QDM Data Elements)

- "Diagnosis: Atrial Fibrillation/Flutter" using "Atrial Fibrillation/Flutter Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.202)"

- "Encounter, Performed: Emergency Department Visit" using "Emergency Department Visit SNOMEDCT Value Set (2.16.840.1.113883.3.117.1.7.1.292)"

- "Encounter, Performed: Non-Elective Inpatient Encounter" using "Non-Elective Inpatient Encounter SNOMEDCT Value Set (2.16.840.1.113883.3.117.1.7.1.424)"
Tools to Create an eCQM

• MAT
  – A web-based tool for measure developers to author eCQMs
  – Uses the QDM, links with VSAC, outputs HQMF

• VSAC
Welcome to the NLM Value Set Authority Center (VSAC)

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

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 provides downloadable access to all official versions of vocabulary value sets contained in the 2014 Clinical Quality Measures (CQMs). Each value set consists of the numerical values (codes) and human-readable names (terms), drawn from standard vocabularies such as SNOMED CT®, RxNorm, LOINC 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 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.
Clinical Quality Measure Reporting in CMS Quality Reporting Programs

- CMS XML (QualityNet portal)
  - Data Submission Vendors
  - CART
- Claims
- Registry XML
- Qualified Clinical Data Registry (QCDR) XML
- Group Practice Reporting Options (GPRO) XML
- Outcome and Assessment Information Set (OASIS)
- Minimum Data Set (MDS)
- Consumer Assessment of Healthcare Providers and Systems (CAHPS) Surveys
- Quality Reporting Data Architecture (QRDA)
Submission of eCQMs

QRDA

• QRDA is a Clinical Document Architecture (CDA)-based HL7 standard for reporting quality measure data

• Two types in use
  – QRDA category I – patient-level
  – QRDA category III – aggregated patient data calculated from QRDA category I documents

• QRDA is the file submitted to and received by the CMS system

• For hospital reporting, only QRDA category I is accepted

• EPs can submit in either QRDA I or QRDA III
Tools for Testing eCQMs

• Bonnie - https://bonnie.healthit.gov/
• Cypress - https://www.healthit.gov/cypress/
• Pre-submission QRDA Validation Tools
  – Presubmission Validation Application (PSVA)
  – Submission Engine Validation Tool (SEVT)
What does this mean for you?
Now and the Future

• eCQMs are now part of several different CMS quality reporting programs
• eCQMs are expected to be added to more programs in the near future
• The current version of the Blueprint has a separate section on eCQMs
  – eCQM information will be integrated within the Blueprint
Potential/Actual Impacts to Quality Reporting Programs

Migration to eCQMs can potentially impact different aspects of quality programs, including, but not limited to:

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection</td>
<td>• Data is entered into EHR, not paper charts</td>
</tr>
<tr>
<td></td>
<td>• Data is extracted from EHRs, no longer manually abstracted from charts</td>
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<tr>
<td>Data Submission</td>
<td>• Amount of data submitted may increase</td>
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<tr>
<td></td>
<td>• Data is submitted in a different format</td>
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<td></td>
<td>• Submission deadlines have changed for hospitals</td>
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<td></td>
<td>• Third-party data aggregation vendor policies and regulations may need to be updated</td>
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<tr>
<td>Validation</td>
<td>• New validation processes have been established for hospitals since EHR-extracted data in QRDA format are different than manually-abstracted data in the existing XML format</td>
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<tr>
<td>Appeals</td>
<td>• Appeal timelines could shift</td>
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<tr>
<td></td>
<td>• Valid reasons for appeals could change</td>
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</tbody>
</table>
References

• eCQI Resource Center
  – https://www.healthit.gov/ecqi
• CMS MAT
• VSAC
• NQF
• JIRA
  – https://oncprojecttracking.healthit.gov
Program-Specific eCQM Questions

- For questions related to eCQMs in the Hospital IQR Program requirements, policy, and alignment, contact the Inpatient Support Team at (844) 472-4477 (8:00am – 8:00pm ET) or submit questions via the Q&A Tool: https://cms-ip.custhelp.com

- For questions on the EHR Incentive Program ("Meaningful Use"), please contact the EHR Information Center (EHRIC) at (888) 734-6433 (7:30am – 6:30pm CT)

- Please direct PQRS Policy and Programs related questions to the QualityNet Help Desk E-mail qnetsupport@hcqis.org and Phone: (866) 288-8912 or TTY: (877) 715-6222
Planned Upcoming Webinars:

- October 17, 2016: Measure Attribution and Variation in Measure Specifications, *NQF*
- December 8, 2016: Measures Inventory / Patient and Stakeholder Engagement, *Battelle*

(Note that there will only be one webinar for the November/December timeframe due to holiday schedules)

Suggestions for future topics?

Email: [MMSsupport@battelle.org](mailto:MMSsupport@battelle.org)
Questions?