Electronic Clinical Quality Measure (eCQM) Submissions: Ready, Set, Go → and Looking into the Crystal Ball

March 2, 2016

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Center for Clinical Standards and Quality
Centers for Medicare & Medicaid Services (CMS)

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.

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Conflict of Interest
Debbie Krauss, MS, BSN, RN and Minet Javellana, RN
Have no real or apparent conflicts of interest to report.
Agenda

• Welcome
• Ready – Background current eCQM CMS programs
• Set - Where to find eCQM submission information
• Go – Electronic Clinical Quality Improvement (eCQI) Resource Center demonstration
• Crystal Ball – CMS future eCQM considerations
• Questions
Learning Objectives

1. Review CMS Programs’ eCQMs
2. View a virtual tour of the CMS eCQI Resource Center
3. Provide an overview & update on CMS Lean activities for eCQMs
4. Present an eCQM standards update and proposed implementation timeline
5. Provide a background & overview on the National Testing Collaborative
6. Recruit potential participants for National Test Collaborative
eCQMs - Not just for the EHR Incentive Program anymore

eCQMs are now part of multiple CMS Programs – and growing, for example:

- EHR Incentive Program for Eligible Professionals
- EHR Incentive Program for Eligible Hospitals and Critical Access Hospitals
- Hospital Inpatient Quality Reporting (HIQR)
- Physician Quality Reporting System (PQRS)
- Comprehensive Primary Care (CPC) Initiative
eCQMs in CMS Programs

- Initially part of CMS EHR Incentive Program rulemaking process
- Specific eCQM reporting requirements now in other rules, e.g.,
  - Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System (IPPS)
  - Physician Fee Schedule
- Pre-Rulemaking Process
  - Measures Under Consideration
  - Measure Applications Partnership
Hospital eCQM eReporting in CY 2016

- Hospitals must submit a **minimum of four eCQMs for one quarter (Q3 or Q4) of CY 2016**

- No National Quality Strategy (NQS) Domain distribution is required

- Submission deadline is **February 28, 2017** through CMS Secure Portal

- Visit the HIQR and EHR Incentive Programs websites for individual program requirements for reporting specifics
Eligible Professional eCQM eReporting in CY 2016

• Eligible Professionals must submit a minimum of nine eCQMs covering at least three National Quality Strategy domains

• Submission deadline is February 28, 2017

• Eligible Professionals have multiple ways (e.g., qualified clinical data registry, group, individual) and formats (e.g., QRDA I and QRDA III) to submit eCQMs

• Visit the PQRS and EHR Incentive Programs websites for individual program requirements for reporting specifics
eCQM Submissions Current Status

Common HQR QRDA I Errors
- Non-conformance to QRDA format
- Discharge date is before the admission date
- Discharge date is not within the Program’s discharge quarters

Common EP QRDA I Errors
- Incorrect value set
- Incorrect format or template
- Missing values

Common EP QRDA III Errors
- Incorrect GUID
- Numerator greater than denominator
- Invalid templates
Resource for eCQMs

• A one stop shop for all things eCQM

• Spring 2015 CMS launched the eCQI Resource Center

• Since then, the Resource Center has grown and will continue to evolve

• Recently hosted over 1300 participants over two live demonstrations
Looking into the CMS Crystal Ball

• Looking to harmonize standards for eCQMs and clinical decision support (CDS)

• CDS and electronic clinical quality measurement are closely related, share many common requirements, and both support improving health care quality.
  – CDS guides a clinician to follow a standard plan of care
  – eCQMs assess the quality of care provided to patients, and may focus on processes of care, structural components of care, or outcomes

• Shared needs:
  – Define patient cohorts (sub-populations)
  – Standard ways to reference patient data in EHR
Lean Methodology for eCQM Development

• Overview of Lean for eCQM development
  – Continuous process improvement methodology; goal is to be more effective and efficient by identifying and eliminating waste in processes and operations
  – Started in 2012
  – Business case: 100% defect rate on eCQM for MU2
  – Engaged internal and external stakeholders

• Kaizen (meaning “improvement) events
  – Held Kaizen events February, 2013 February, 2014 and December, 2014
  – Attendees: CMS, ONC, measure developer contractors, providers, vendors, trade associations
  – Identified waste and inefficiencies through value stream mapping
  – Led to major changes in eCQM development
Lean Methodology for eCQM Development

• Outcomes of Kaizens
  – Integrate tools to facilitate the measure authoring process: Measure Authoring Tool with the Value Set Authority Center
  – Enhanced tools for test driven development: Bonnie
  – Combine implementation guide for data submission to CMS: EP and EH/CAH eCQMs to be program specific
  – Aligned program years for EP and EH/CAH to start Calendar Year
  – One source of information for everything electronic clinical quality improvement: Resource Center
  – Multi-stakeholder engagement for Annual Update: Change Review Process
  – Rigorous testing: National Testing Collaborative

• [https://ecqi.healthit.gov/ecqi/kaizen](https://ecqi.healthit.gov/ecqi/kaizen)
Evolving eCQM Standards

Definitions:

HQMF – Healthcare Quality Measures Format
CQL – Clinical Quality Language
QDM – Quality Data Model
### Differences Between the Quality Data Model (QDM) and Clinical Quality Language (CQL)

<table>
<thead>
<tr>
<th>QDM</th>
<th>CQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Logic and Data Model in one</td>
<td>• Logical Expression Language</td>
</tr>
<tr>
<td>• Tightly Coupled Conceptual, Logical and Physical Layers</td>
<td>• Separation of Conceptual, Logical, and Physical Layers</td>
</tr>
<tr>
<td>• Verbose and Data points required to intermingle with logic</td>
<td>• Clear, Concise, and logically expressive language</td>
</tr>
<tr>
<td>• Rigid Expression Language</td>
<td>• Flexible Expression Language</td>
</tr>
</tbody>
</table>

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## Benefits of CQL

<table>
<thead>
<tr>
<th>Feature</th>
<th>QDM Logic</th>
<th>CQL Logic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modularity and Computability</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Data Model Flexibility</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td>Expressive and Robust Logic Expression</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Duplicative work for Implementers, Vendors, and Developers</td>
<td>Yes</td>
<td>Lower</td>
</tr>
</tbody>
</table>
# Proposed Timeline For Updating Standards

**Work Effort:** 2016 through Fall 2017

<table>
<thead>
<tr>
<th>Measures using QDM v4.2 &amp; HQMF 2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing CQL – QDM – HQMF 2.1</td>
</tr>
<tr>
<td>Testing eCQM using CQL – QDM – HQMF 2.1</td>
</tr>
</tbody>
</table>

- **Testing and Development**
  - Measure Developers
  - Implementers & Vendors
  - CQL Training/Education
  - Measure Authoring Tool
  - Bonnie & Cypress
  - Quality Data Model
  - Integration Testing
  - Feedback Loops

Measure Development
- 2015
- 2016

Fall 2017 +
National Testing Collaborative

• Mission:
  Accelerating **transformational change** through a **multi-disciplinary** collaborative that promotes and fosters the **early engagement** of stakeholders throughout the clinical quality measure development and testing process on a **sustained** basis.

• Public-private partnership eCQM stakeholders committed to improving the quality of eCQMs through robust and efficient testing activities
  – Federal sponsors
  – Measure developers
  – Providers
  – EHR vendors
National Testing Collaborative

Why does CMS need an NTC?

*Stakeholders need feasible, valid, reliable and implementable eCQMs*

- The next generation of eCQMs require novel data elements yet stakeholders need measures that
  - Reflect existing workflows
  - Can be implemented broadly in CMS programs
- eCQM testing processes are time and labor intensive
- eCQM standards are evolving: need to be current, relevant, and agile
National Testing Collaborative

What are the benefits to providers who participate in the NTC?

• Opportunity for quality improvement of the eCQM through feedback on clinical processes and outcomes for measures in development
  ▪ Pilot and prepare for measure implementation
• Opportunity to provide input on and refine measures
• Opportunity to use testing results for improvement on performance or future measure selection
National Testing Collaborative

What is the ‘ask’ of providers and vendors?
• Desire and willingness to be on the forefront of eCQM development
• Interest in CMS measurement priorities

<table>
<thead>
<tr>
<th>Measure developer access to</th>
<th>Purpose for eCQM testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers</td>
<td>Assess workflow feasibility, face validity and usability</td>
</tr>
<tr>
<td>EHR extract of de-identified patient data</td>
<td>Assess feasibility of data elements; reliability and validity of provider score</td>
</tr>
<tr>
<td>Full patient ‘chart’</td>
<td>Assess validity of data elements through comparison between extract and full patient record</td>
</tr>
<tr>
<td>EHR vendor staging environment</td>
<td>Assess implementability through automated consumption of eCQM specifications</td>
</tr>
</tbody>
</table>
National Testing Collaborative

What have we done so far?

• Accomplished
  ▪ Paper Reduction Act (PRA) Exemption

• Work in Progress
  ▪ Started onboarding calls for potential test sites
  ▪ Templates for Business Associate Agreement (BAA)
    Template and Memorandum of Understanding (MOU)
  ▪ Rolodex – tool for recruiting potential test sites
  ▪ Onboarding potential test sites
Additional HIMSS16 Activities

- CMS Booth #10309: Office Hours – Quality Measurement and Reporting
  - March 2, 2016 – 2:00 – 3:00
  - March 3, 2016 – 1:00 – 2:00
- Interoperability Showcase Booth #11954
  - March 3, 2016 – 10:00: eCQM Submission Errors and Cypress Validation Utility Tool
- ESAC Booth #12028
- MITRE Room Zeno 4607-4608
  - Bonnie Demo
    - March 2, 2016: 3:00 – 3:30
  - Cypress Demo
    - March 2, 2016: 3:30 – 4:00
Questions?

Thank you for your attention!

- **QualityNet Help Desk**: 866-288-8912 (TTY 877-715-6222) or qnetsupport@hcqis.org

- **EHR Incentive Program Information Center**: 888-734-6433 (TTY 888-734-6563)
Resources

- https://ecqi.healthit.gov
- https://ecqi.healthit.gov/ecqm
- https://cportal.qualitynet.org/QNet/pgm_select.jsp
- http://www.qualityforum.org/Setting_Priorities/Partnership/Measure_Applications_Partnership.aspx
- https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228773849716
Back up screen shots of eCQI Resource Center
eCQI Resource Center

The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.

Getting Started

A gentle introduction to understanding eCQI and this Resource Center

More information

eCQMs

The who, what, when, where, and why of eCQMs

More information

Education

A selection of educational materials and resources to broaden your eCQI knowledge

More information

Latest News

Wed 27 Jan

Education Space added to the eCQI Resource Center

An education-specific space has been added to the eCQI Resource Center making it easier for users to find topic-specific educational presentations. The goal is to post or link to eCQI-related education materials as they become available. The space also includes a calendar of eCQI-related education events. Check back frequently for updates.

Tue 26 Jan

NLM released VSAC update version 2.10.4

NLM released VSAC update version 2.10.4 on January 19, 2016. VSAC 2.10.4 includes the following updated code system versions:


Upcoming Events

Jan 27 2016

eCQI Resource Center Demonstration - Event is Full

January 27, 2016 Webinar Registration is now closed.

Thank you for your interest in participating in the live demonstration of the eCQI Resource Center. Unfortunately, due to an unexpectedly large level of interest in the eCQI Resource Center webinar planned for January 27th, the registrations quickly exceeded the 1500 spots we had available.

Jan 28

eCQI Resource Center Demonstration

CMS and ONC would like to re-introduce you to the eCQI Resource Center. This one-stop shop for the most current...
Inpatient Quality Reporting (IQR) Program Chart-Abstracted and eCQM Measure Submissions Requirements for CY 2016/FY 2018

The Centers for Medicare & Medicaid Services (CMS) has mandated that Eligible Hospitals (EHS) must submit eight chart-abstracted measures to meet the IQR Program requirement for Calendar Year (CY) 2016/Fiscal Year (FY) 2018, including: ED-1, ED-2, PC-01, STK-4, VTE-5, VTE-6, IMM-2, and SEP-1. In addition to the chart-abstracted measure requirements, an EHS is required to submit a minimum of any four of the available 28 eCQMs. Please visit the QualityNet website to review the...

Read more

QRDA eCQM Submission Customer Satisfaction Survey

The Centers for Medicare and Medicaid (CMS) would like to know more about your experience(s) submitting Quality Reporting Document Architecture (QRDA) electronic Clinical Quality Measures (eCQMs) for your hospital's participation in the Hospital Quality Reporting (HQR) program. Your feedback is very important. Help CMS to improve the submission process.

All survey answers are anonymous and will help CMS to evaluate and improve your data submission experience. The survey will take approximately 5-10 minutes to complete. Your response to the survey is requested no later than close... Read
The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.

Getting Started
- A gentle introduction to understanding eCQI and this Resource Center

eCQMs
- The who, what, when, where, and why of eCQMs

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Putting eCQMs to Work

‘The who, what, when, where and why’

Who are the key people that are involved in eCQM development or use?

- Providers
- Patients
- Implementers
- Measure stewards
- Measure developers
- Health IT developers
- Quality improvement organizations
- Insurers/Payers

What are the main components used to implement eCQMs?

- EH Measures & specifications
- EP Measures & specifications
- Guidance documentation
- Tools

When are key dates associated with eCQMs?

- Comment period(s)
- Measure and measure specification publication
- Measurement period
eCQM

About electronic Clinical Quality Measures

Where can I find the eligible hospital measures?
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What are clinical quality measures (COMs)?
Each year, CMS makes updates to the electronic specifications of the Clinical Quality Measures approved for submission in CMS programs. CMS encourages the use of the updates because they include new codes, logic corrections and clarifications. Below are Eligible Hospital (EH) electronic measure specifications and linked documentation.

**Eligible Hospital (EH) Downloads**

**June 2015 Update for the 2016 Reporting Year**

- 2014 eCQMs for Eligible Hospitals Table Update May 2015 (pdf)
- 2014 eCQM Specifications for Eligible Hospitals Update June 2015 (zip)
- 2014 eCQM Eligible Hospital Technical Release Notes May 2015 (zip)
- 2014 eCQM Eligible Hospital Technical Release Notes Update June 2015 (zip)
- 2014 eCQM Measure Logic Guidance v1.11 Update June 2015 (pdf)

**April 2014 Update**

- 2014 eCQM Eligible Hospital Table April 2014 (pdf)
- 2014 eCQM Specifications for Eligible Hospitals Update April 2014 (zip)
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# 2014 Measures 2015 Update

Clinical Quality Measures and their electronic specifications as defined in the 2015 update for Eligible Hospitals.

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>CMS ID</th>
<th>NQF ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive Breast Milk Feeding</td>
<td>CMS9v4</td>
<td>0480</td>
</tr>
<tr>
<td>Home Management Plan of Care (HMPC) Document Given to Patient/ Caregiver</td>
<td>CMS26v3</td>
<td>None</td>
</tr>
<tr>
<td>Statin Prescribed at Discharge</td>
<td>CMS30v5</td>
<td>0639</td>
</tr>
<tr>
<td>Hearing Screening Prior To Hospital Discharge</td>
<td>CMS31v4</td>
<td>1354</td>
</tr>
<tr>
<td>Median Time from ED Arrival to ED Departure for Discharged ED Patients</td>
<td>CMS32v5</td>
<td>0496</td>
</tr>
<tr>
<td>Primary PCI Received Within 90 Minutes of Hospital Arrival</td>
<td>CMS33v4</td>
<td>0163</td>
</tr>
<tr>
<td>Median Time from ED Arrival to ED Departure for Admitted ED Patients</td>
<td>CMS55v4</td>
<td>0495</td>
</tr>
<tr>
<td>Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival</td>
<td>CMS60v4</td>
<td>0164</td>
</tr>
<tr>
<td>Anticoagulation Therapy for Atrial Fibrillation/Flutter</td>
<td>CMS71v5</td>
<td>0436</td>
</tr>
<tr>
<td>Antithrombotic Therapy By End of Hospital Day 2</td>
<td>CMS72v4</td>
<td>0438</td>
</tr>
</tbody>
</table>
Hearing Screening Prior To Hospital Discharge

Current Measure Specs

CMS100v4 - AMI2
CMS102v4 - Stroke10
CMS104v4 - Stroke2
CMS105v4 - Stroke6
CMS107v4 - Stroke8
CMS108v4 - VTE1
CMS109v4 - VTE4
CMS110v4 - VTE5
CMS111v4 - ED2
CMS113v4 - PC01
CMS114v4 - VTE6
CMS171v5 - SCIPIinf1
CMS172v5 - SCIPIinf2
CMS178v5 - SCIPIinf9
CMS185v4
CMS185v5 - PN6
CMS190v4 - VTE2
CMS26v3 - HMPC
CMS30v5 - AMI10

2014 Measures 2015 Update
Last updated: August 24, 2015

CMS Measure ID: CMS31v4
Version: 4
NQF Number: 1354

Measure Description: This measure assesses the proportion of births that have been screened for hearing loss before hospital discharge.

Initial Patient Population: Live birth encounters at a hospital or birthing facility where the newborn was discharged during the measurement period.

Measure Population: Not applicable
Measure Observations: Not applicable
Denominator Statement: Denominator is equal to the Initial Population.
Denominator Exclusions: Live birth encounters where the patient expires prior to discharge and has not received hearing screening for the left or right ear.
Release Notes

Header

Copyright updated.
Disclaimer updated.
eMeasure version number incremented.
Updated criteria in the Denominator Exclusions representing when a patient expires to harmonize across measures.
Updated the Denominator header statement to be consistent across hospital measures.
Updated the Numerator header statement to better align with measure logic.

Logic

Added 'during Occurrence A of Encounter, Performed: Encounter Inpatient' for each 'AND' statement in the Denominator Exclusions to clarify the logic in the left-hand side or right-hand side of a timing clause.
Changed data type of 'Result' or 'Finding' to 'Performed'.
For consistency across all measures, Discharge Status: Patient Expired is used as the criteria to determine if a patient expired during an encounter.
Introduced the 'intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'intersection of'.
Introduced variable $EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.

Value Sets

No changes

External Resources

United States Health Information Knowledgebase (USHIK)
Short Name: EHDL_1a
Previous Version: Hearing Screening Prior To Hospital Discharge
Measure Score: Proportion
Score Type: Process
Improvement Notation: Improvement noted as an increase in rate.
Guidance: The measurement period is one calendar year but the reporting period is jurisdictionally defined.

Specifications
- CMS31v4_1.html
- CMS31v4_1.xml
- CMS31v4_SimpleXML_1.xml
- EH_CMS31v4_NQF1354_EHDL1a_HearScreen_1.zip
- CMS31v4TRN905012015_1.xlsx

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eCQM

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- [2014 eCQM Measure Logic Guidance v1.11 Update June 2015](#) (pdf)
- [2014 eCQM Measure Logic Flows for Eligible Professionals Update June 2015](#) (zip)

#### July 2014 Update for the 2015 Reporting Year

- [2014 eCQMs for Eligible Professionals Table July 2014](#) (pdf)
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- [2014 eCQM Measure Logic Flows for Eligible Professionals July 2014 1 of 2](#) (zip)
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What are clinical quality measures (COMs)?
eCQI Implementer's Corner

The eCQI Implementers' Corner provides information and tools to inform the design and execution of eCQI activities.

An “implementer” does many things to prepare processes and systems such as:
- putting measure data components into systems and workflow
- using measures when conducting health care activities
- providing information from measures to inform quality improvement

The success of eCQI activities depends on the tireless efforts of the entire care team and those that support them: practice administrators, quality improvement leadership, information technology staff, providers, and others. These individuals need to work together to execute a plan to improve quality and reduce costs.

Electronic health data can help providers and health care organizations transform the care they deliver through quality improvement activities. However, the existence of data alone does not improve quality. One must use the data with eCQI tools and activities to improve quality such as:
- Electronic Clinical Quality Measures (eCQMs) that help providers know how they compare with other providers on key quality indicators and whether or not they are using evidence-based care
- Clinical Decision Support (CDS) to ensure the 5 CDS Rights:
  - right information is provided
  - to the right person
  - in the right intervention format
  - through the right channel
  - at the right time in workflow
- Understanding and optimizing daily care activities and workflow to be effective and efficient

Key Implementer Resources:
- eCQM 101 - Getting Started with eCQM for Quality Reporting Programs - March 25, 2015  (pdf)
- eCOM 101 Webinar
Electronic Clinical Quality Improvement (eCQI)

Electronic Clinical Quality Improvement (eCQI) uses a variety of processes, health IT tools, standards and measurement to help continuously improve the quality of care, support improved health and outcomes. Health IT enables this improvement through the rapid feedback of performance via electronic clinical quality measures (eCQMs) as well as real-time improvement tools such as clinical decision support (CDS).

Specifications for electronic clinical quality measures for use in Medicare and Medicaid programs are created by CMS and certified by ONC. Measures quantify improvement in the quality and safety of care, health outcomes of populations, and provider and patient experience of care. The standards used for the electronic representation of quality data formats in eCQMs are proposed and approved by standards organizations and stakeholders in the eCQI community and approved by CMS for measures used within their quality incentive programs. Tools are available for the development, testing, and certification of eCQMs and are highlighted on the eCQI tools page.
eCQM

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eCQI Standards

About electronic Clinical Quality Improvement standards

Standards are critical to data consistency, validity and interoperability. Their use makes it easier to:

- Share information
- Develop software
- Integrate data
- Implement systems

Standards constantly improve so that more sophisticated data can be captured, used and analyzed.

While eCQI is made up of eCQMs and Clinical Decision Support (CDS), you'd think both use the same standards, but they don't. It's important to understand the difference.

Current eCQM standards

- **QDM**
  Quality Data Model

- **HQMF**
  Health Quality Measures Format

- **QRDA**
  Quality Reporting Document Architecture

Current CDS standards:

- Virtual Medical Record (vMR) data model and templates
- Health eDecisions (HeD) CDS Knowledge Artifact Specification (KAS)
What's the Quality Reporting Document Architecture (QRDA)?

The Health Level Seven International (HL7) Quality Reporting Document Architecture (QRDA) is a standard document format for the exchange of electronic clinical quality measure (eCQM) data. QRDA reports:

- Contain data extracted from electronic health records (EHRs) and other health information technology systems.
- Can be used to exchange eCQM data between systems.
- Are the data submission standards for a variety of quality measurement and reporting initiatives.
- Were adopted by the Office of the National Coordinator for Health Information Technology (ONC) as the standard to support both QRDA Category I (specific to a patient) and QRDA Category II (aggregate) data submission approaches for Stage 2 of Meaningful Use (MU2).

QRDA Category I and II specifications have and will be used as Draft Standards for Trial Use (DSTUs). HL7 issues DSTUs during the standards development life cycle when many, but not all, of the guiding requirements have been clarified. DSTUs are tested and then formalized in the HL7 ballot process into an American National Standards Institute (ANSI)-accredited normative standard. QRDA I was renewed in 2014; QRDA Cat III DSTU will be renewed in November 2015.

CMS has developed and published the CMS QRDA Category I Implementation Guides for Eligible Professionals and Eligible Hospitals for the 2014 eCQM reporting. These guides:

- Are based on the HL7 QRDA Category I, DSTU Release 2, and its December 2012 errata update.
- Provide CMS-specific requirements for the Eligible Professionals and Eligible Hospitals, such as requiring the CMS Certification Number for hospitals when submitting QRDA Category I reports, further constraining the base HL7 standard.

For aggregated reporting, CMS has also developed and published the CMS QRDA Category III Implementation Guide for Eligible Professionals for the 2014 eCQM reporting. The guide further constrains the base HL7 QRDA Category III standard to define CMS specific requirements for Eligible Professionals.
<table>
<thead>
<tr>
<th>QRDA Reference and Implementation Guides for eCQM</th>
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<tbody>
<tr>
<td>2016 CMS QRDA Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting  (pdf)</td>
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<td>2016 CMS QRDA-I Schematrons and Sample Files version 2  (zip)</td>
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<td>2015 CMS QRDA Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting  (pdf)</td>
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<td>Addendum to 2015 CMS QRDA Implementation Guide for Eligible Professional and Hospital Quality Reporting  (pdf)</td>
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<td>2015 CMS/CPCC QRDA III Sample File updated October 2015  (zip)</td>
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<tr>
<td>2014 CMS Performance Rate Calculation Requirement for Eligible Professionals QRDA-III  (pdf)</td>
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<tr>
<td>Guide to the Quality Reporting Data Architecture, QRDA, for 2014 eCQMs  (pdf)</td>
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<td>2014 CMS QRDA Implementation Guide for Eligible Hospital Clinical Quality Measures  (pdf)</td>
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<td>2014 CMS QRDA Implementation Guide for Eligible Hospital Clinical Quality Measures (Effective July 1, 2014)  (pdf)</td>
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<td>2014 CMS QRDA I Implementation Guides for Eligible Professionals Clinical Quality Measures  (zip)</td>
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<td>2014 CMS QRDA Cat 1 Eligible Hospital Sample Files April 2014  (zip)</td>
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eCQM Tools & Key Resources

Overview of eCQM-related Tools

The eCQM tools and resources referenced in this section are openly available and are provided for stakeholder use. They provide a foundation for the development, testing, certification, implementation, reporting, continuous evaluation of quality measures and their improvement.

Use this interactive graphic to explore current eCQM tools and resources openly available for stakeholder use. The tools and resources provide developers, implementers, and other stakeholders a foundation for the development, testing, implementation, reporting, and continuous evaluation of eCQM. Each tool and resource has a link for more information.

We encourage your feedback on this graphic. Please e-mail us at eeqy-resource-center@hhs.gov.

Download the PDF version of this diagram here: [eCQM Ecosystem.pdf](#ccq)
Bonnie
Bonnie website
Category: Development, Testing
Bonnie is a tool for testing electronic clinical quality measures (eCQMs). This tool is designed for use by measure developers as part of their development process and validates that the eCQM logic matches the measure’s intent. Bonnie uses patient scenarios to represent each logic component of the measure specification such as the IPP, denominator, numerator, exclusions, etc. Health IT developers and implementers may also use the tool to evaluate measure implementation into their systems. Measure developers use both Bonnie and MAT in concert to promote test driven development.

Bonnie User Forum
Bonnie User Forum
Category: Development, Testing
This user forum is a community of Bonnie users that benefit from one another’s experience and questions, and allows the development team to easily reach out to the community regarding new releases, proposed features, and focus group opportunities.

To join:

Cypress
Cypress website
Category: Certification, Testing
Cypress is an open source certification testing tool for evaluating the accuracy of clinical quality measure calculations in electronic health records (EHRs) systems and EHR modules. Cypress enables testing of an EHR’s ability to accurately calculate eCQMs. Cypress serves as the official eCQM testing tool for the 2014 EHR Certification program by the Office of the National Coordinator for Health IT (ONC). View slides from Cypress 101 session.

Cypress Tech Talks
Cypress Tech Talks Signup
Category: Communication, Continuous Evaluation
Cypress Tech Talks are an open forum for discussing technical implementation and tool issues with the Cypress team.

Data Element Catalog (DEC)
Data Element Catalog webpage
Category: Development, Implementation
A data element is a clinical concept such as a diagnosis, lab value or gender that is coded using standardized terminologies and
**eCQI Resource Center**

The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.

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**eCQM Tools & Key Resources**

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**eCQM Tool Categories**

- Certification
- Communication
- Continuous Evaluation
CMS QRDA Pre-Submission Validation Tools

This interactive tool details the different aspects of multiple QRDA validation tools that are available to submitters. It is intended to give users a single point of reference for these tools and assist them in selecting the most appropriate tool to meet their individual needs.

Get Started
CMS QRDA Pre-Submission Validation Tool

**HOW THIS TOOL WORKS**

1) Hover over any of the 4 QRDA Validation Tools for Quick Facts.
2) Then click one of the tools for more information.

For more information, please view the [QRDA Validation Tool Spreadsheet](#) [xlsx, 19 KB]
Cypress QRDA Validation Utility

Hover over a category, and click to learn more about this tool

Pre-Submission Validation Application (PSVA)

CMS Secure Portal

Submission Engine Validation Tool (SEVT)

Quick Check
How To Access
Technical Specifications

CMS Supported Programs
Error Reporting & Stored Results
Other Features & Comments

Support Contacts
The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.

Getting Started

A gentle introduction to understanding eCQI and this Resource Center

More information

eCQMs

The who, what, when, where, and why of eCQMs

More information

Education

A selection of educational materials and resources to broaden your eCQI knowledge

More information

Latest News

Wed 27 Jan

Education Space added to the eCQI Resource Center

An education-specific space has been added to the eCQI Resource Center making it easier for users to find topic-specific educational presentations. The goal is to post or link to eCQI-related education materials as they become available. The space also includes a calendar of eCQI-related education events. Check back frequently for updates.

Tue 26 Jan

NLM released VSAC update version 2.10.4

NLM released VSAC update version 2.10.4 on January 19, 2016. VSAC 2.10.4 includes the following updated code system versions:


Upcoming Events

Jan 27 2016

eCQI Resource Center Demonstration - Event is Full

January 27, 2016 Webinar Registration is now closed. Thank you for your interest in participating in the live demonstration of the eCQI Resource Center. Unfortunately, due to an unexpectedly large level of interest in the eCQI Resource Center webinar planned for January 27th, the registrations quickly exceeded the 1500 spots we had available.

Jan 28 2016

eCQI Resource Center Demonstration

CMS and ONC would like to re-introduce you to the eCQI Resource Center, the one-stop shop for the most current...
Education

eCQI Educational Resources

eCQM Education

January 2016

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There is no content in this space.
The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.
eCQI Resource Center Contact Information

Getting in touch with the eCQI Resource Center

The eCQI Resource Center will be constantly improving to better meet the needs of its users. We are counting on your input to make it as useful as possible. Please send any news, events, content or questions you have about the eCQI Resource Center to ecqi-resource-center@hhs.gov.

A checklist and information on 508 requirements for content are found at these links.

Getting help with eCQMs

Direct MU Policy and Program Questions to: The Electronic Health Record (EHR) Information Center
7:30 a.m. — 6:30 p.m. (Central Time) Monday through Friday, except federal holidays
888-734-6433 (press option 1) TTY: 888-734-6563

Direct PQRS and IQR Policy and Program Questions to: The QualityNet Help Desk
E-mail: qnetsupport@hcqs.org
Phone: (866) 289-8912 TTY: (877) 715-6222
ecQI Resource Center
The one-stop shop for the most current resources to support Electronic Clinical Quality Improvement.

Public Spaces
- eCQI
- eCQM
- EH
- EP
- eCQM Tools & Key Resources
- eCQI Standards
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- ICD-10CM 2016
- LOINC 2.54

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CDS/eCQM Harmonization

How are CDS & eCQM different?

Clinical Decision Support (CDS) and electronic Clinical Quality Measurement (eCQM) are closely related, share many common requirements, and support health care quality improvement. It's important to also understand, though, the differences between them and the efforts to help them work together (harmonize).

The standards used for the electronic representation of CDS and eCQM were developed separately and use different data models and computable expression languages. Different standards make:

- Re-using or sharing machine readable logic between eCQMs and CDS rules very difficult.
- A burden for health IT developers and those who give provider technical support.

Why harmonize CDS & eCQM?

When CDS and eCQM standards can work together or “harmonize,” it's easier to implement them. Harmonization also makes it easier to integrate and facilitate health IT enabled clinical quality improvement.

Ultimately, same or similar standards will be made and used to:

- Measure if appropriate care was given.
- Suggest care to providers and care teams when there are opportunities to improve care quality.
- Instead of developing a new standard that could be used for eCQM and CDa, the focus is on:

  - “Modularizing” or organizing the existing standards so they're more flexible.
  - Making common components that can be shared by both.

The diagram below shows this approach.

Goal: Shared Standards

Clinical Quality Measurement and Clinical Decision Support