eCQM 101 - Getting Started with Electronic Clinical Quality Measures (eCQMs) for Quality Reporting Programs

Resources

Updated May 2022
eCQM 101 Overview

• What resources are helpful to successfully implement eCQMs?
• What resources are available to help me test the eCQMs?
• Where do I find key resources to help me understand eCQMs?
What resources are helpful to successfully implement eCQMs?
Key eCQM Materials

- **Guide for Reading eCQMs** provides a detailed overview of reading eCQMs and eCQM-related documents.
- **eCQM Logic and Implementation Guidance document** provides guidance for understanding, using, and implementing eCQMs.
- **Implementation Checklist**
- **Measure Specific**
  - Technical Release Notes
  - Value Sets and Direct Reference Codes in the Value Set Authority Center (VSAC)
  - eCQM Flows
eCQM Implementation Checklist

Receive updates on this topic

The Centers for Medicare & Medicaid Services (CMS) requires an eligible professional (EP), eligible clinician (EC), eligible hospital (EH) or critical access hospital (CAH) to use the most current version of the eCQMs for quality reporting programs.

The Preparation and Implementation Checklists (PDF) assume that a health care practice/organization has determined which measures to report on. It provides the necessary technical steps health information technology (IT) developers, implementers and health care organizations must take to update their systems and processes with the eCQM Annual Update for the upcoming reporting and performance periods. The most recent eCQM Annual Update should be applied to your system for use in CMS electronic quality reporting.

Preparation Checklist

1. Sign up for a Unified Medical Language System (UMLS) account
2. Sign up for an OpenProject Tracking Jira account
3. Sign up for eCQM page change notifications on the eCQI Resource Center
4. Review the code system versions used in the eCQM specification for the upcoming reporting/performance year
5. Review the standards, tools, and documents used to support the eCQM specification for the upcoming reporting/performance year

Implementation Checklist

1. Access the previous eCQM Annual Updates

https://ecqi.healthit.gov/ecqm-implementation-checklist
TRNs outline changes in eCQM specifications as compared with the previous version.

<table>
<thead>
<tr>
<th>For Use</th>
<th>eCQM Implementation Resources</th>
<th>2022 Reporting Period</th>
<th>Eligible Hospital / Critical Access Hospital Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022 01-04</td>
<td>Implementation Checklist eCQM Annual Update</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Guide for Reading eCQMs v7.0 (PDF)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Hospital Quality Reporting Table of eCQMs (PDF)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>eCQM Specifications for Hospital Quality Reporting (ZIP)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>eCQM Value Sets</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>eCQM Direct Reference Codes List</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Binding Parameter Specification (BPS)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Binding Parameter Specification (BPS)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>eCQM Logic and Implementation Guidance v5.0 (PDF)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Technical Release Notes (PDF)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Technical Release Notes (ZIP)</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>Standards and tool versions used for reporting period</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
<tr>
<td>2022 01-04</td>
<td>eCQM Flows – Coming Soon</td>
<td>2022</td>
<td>Eligible Hospital / Critical Access Hospital Resources</td>
</tr>
</tbody>
</table>
Value Set Authority Center

VSAC houses the value sets and Direct Reference Codes used by eCQMs and is maintained by the National Library of Medicine (NLM). You must have a free UMLS license to access value set details.

### Value Set

A **Value Set** is a list of specific values, terms, and their codes, used to describe clinical and administrative concepts used in eCQMs.

### Direct Reference Code (DRC)

A **Direct Reference Code (DRC)** is a specific code that is referenced directly in the eCQM logic to describe a data element or one of its attributes. DRC metadata include the description of the code, the code system from which the code is derived, and the version of that code system.

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<table>
<thead>
<tr>
<th>Available Downloads</th>
<th>Sorted by CMS ID*</th>
<th>Sorted by Value Set Name*</th>
<th>Sorted by Quality Data Model Category*</th>
</tr>
</thead>
<tbody>
<tr>
<td>eCQM Value Sets for Eligible Hospitals Published May 06, 2021</td>
<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
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<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
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<td>Excel (xlsx)</td>
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<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
<tr>
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<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
<tr>
<td>Code System Versions Currently in eCQM Value Sets Published May 06, 2021</td>
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<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
<tr>
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<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
<td>Excel (xlsx)</td>
</tr>
</tbody>
</table>
Value Set Snippet

eCQM Flow Snippet: Discharged on Antithrombotic Therapy

2022 eCQM Flow – CMS104v10: Discharged on Antithrombotic Therapy (STK-02)*

*This flow diagram represents an overview of population criteria requirements. Please refer to the eCQM measure specification for a complete list of definitions, direct reference codes, data or timing elements included in this measure and required for submission.

Initial Population

- Start
- "Encounter with Principal Diagnosis and Age"
- Criteria Met?
  - NO → END
  - YES → "Ischemic Stroke Encounter"

Denominator

- "Ischemic Stroke Encounter"
- WHERE EXISTS Encounter (Diagnosis) "ISCHEMIC STROKE" Rank=1
- Criteria Met?
  - NO → END
  - YES → "Ischemic Stroke Encounters with Discharge Disposition"

Denominator Exclusions

- "Ischemic Stroke Encounter"
  - WHERE (Discharge Disposition) "DISCHARGE TO ACUTE CARE FACILITY" OR "LEFT AGAINST MEDICAL ADVICE" OR "PATIENT EXPIRED" OR
  - Criteria Met?
    - NO → END
    - YES → "Encounter with Comfort Measures During Hospitalization"

- "Ischemic Stroke Encounter"
  - Criteria Met?
    - YES → Continued on Page 2

eCQM Flows provide an overview of the population criteria components and their inclusion or exclusions into the eCQM’s numerator.
What resources are available to help me test the eCQMs?
Bonnie: An eCQM Testing Tool

You must have a HARP (HCQIS Access and Roles Profile) account to access

Information on what this version supports

https://bonnie.healthit.gov/
Bonnie: An eCQM Testing Tool (Cont’d)

• Bonnie is a software tool that allows eCQM developers to test and verify the behavior of their eCQM logic.

• The Bonnie application allows measure developers to independently load measures they have constructed using the Measure Authoring Tool (MAT) and helps measure developers execute the measure logic against the constructed patient test deck and evaluate whether the logic aligns with the intent of the measure.

• There are three instances of Bonnie available
  ▪ Bonnie QDM - supports current QDM version of QDM-based eCQMs
  ▪ Bonnie Prior- supported previous QDM versions of QDM-based eCQMs
  ▪ Bonnie FHIR - supports FHIR-based eCQMs
Cypress Testing Tool

What is Cypress?
Cypress is the rigorous and repeatable testing tool of Electronic Health Records (EHR) and EHR modules in calculating eCQMs used by CMS's Quality Reporting Programs. The Cypress tool is open source and freely available for use or adoption by the health IT community.

Objective
The objective of Cypress is to enable repeatable and rigorous testing of an EHR's ability to accurately calculate eCQMs. Cypress has been recognized by ONC as the official eCQM testing tool for use in CMS quality reporting programs electronic Clinical Quality Measures certification.

Bi-Weekly Tech Talks
*NEW DIAL-IN INFORMATION*
As of October 8, 2019, the Tech Talk dial-in information has changed. See below:
1. Go to

https://www.healthit.gov/cypress/
Cypress Testing Tool (Cont’d)

- Cypress is an open-source testing tool used by vendors to certify their electronic health records (EHRs) and health information technology (IT) modules for calculating eCQMs. Cypress is an official testing tool for the Office of the National Coordinator for Health IT (ONC) EHR Certification Program.
- Testing involves Cypress generating synthetic patient records for the subset of published eCQMs selected for certification and testing the ability of the EHR systems and health IT modules to accurately record, import, calculate, filter, and report eCQMs.
- Cypress integrated the Cypress Validation Utility + Calculation Check (CVU+) into the Cypress application. The CVU+ facilitates real world testing, providing health IT vendors the ability to perform tests using their own test patients.
- For measured entities submitting QRDA files - The CVU+ also supports validation with the CMS QRDA IGs and performs eCQM calculation with measure logic highlighting.
Where do I find key resources to help me understand eCQMs?
eCQI Resource Center

https://ecqi.healthit.gov

The eCQI Resource Center is the ‘one-stop shop’ for the most current resources to support electronic quality improvement.
eCQI Resource Center – eCQI Tools and Resources Library

https://ecqi.healthit.gov/ecqi-tools-key-resources?qt-teste=2
eCQI Resource Center - eCQM Educational Resources

eCQM and eCQI Educational Resources

- Get Started with eCQM/eCQI: General resources from a variety of sources and presentations
- eCQM Tools: Resources available on eCQM tools such as Bonnie, Cypress, and the Measure Authoring Tool (MAT)
- CQL: Resources available on the Clinical Quality Language (CQL) standard
- FHIR: Resources available on the Fast Healthcare Interoperability Resources® (FHIR) standard
- QDM: Resources available on the Quality Data Model (QDM) standard
- QRDA: Resources available on the Quality Reporting Document Architecture (QRDA) standard

https://ecqi.healthit.gov/ecqm-and-ecqi-education-resources
Glossary

Agile development
Agile development is a term used to describe iterative software development in order to shorten the software development lifecycle. Agile development teams execute the entire software development lifecycle in smaller increments, usually called sprints, typically 1-4 weeks long. Agile development is often contrasted with traditional or waterfall development, where larger projects are planned up front and executed against that plan. Agile development is an iterative approach to development with regular feedback loops or intervals. These iterations allow diversion of a team to and productive in another part of a project while resolving a problem or issue in another part. Microsoft. (2021, May 12), What is agile?.

Alignment
Alignment is achieved when a set of measures works well across settings or programs to produce meaningful information without creating extra work for those responsible for the measurement.

Analytic model or framework
An analytic model for developing clinical practice guidelines is a visual representation of a causal pathway showing the linkages between how the proposed key research question(s) and intervention(s) under consideration as reflected in the PICOTS (P-Patient population; I- Intervention; C- Comparator; O- Outcome; T- Timing; S- Setting) framework and to their intended outcomes that require confirmation by evidence review to support related recommendations. The linkages in the model represent critical logical premises and presumed relationships among intermediate, surrogate, and ultimate health outcomes related to a specified clinical question. Woolf S., Schönenmann, H. J., Eccles, M. P., Grimshaw, J. M., Shekelle, P. (2012). Developing clinical practice guidelines: types of evidence and outcomes; values and economics, synthesis, grading, and presentation and deriving recommendations. Implementation Science, 7(61). https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-7-617

https://ecqi.healthit.gov/glossary
Additional Information

• Companion eCQM 101 Presentations
  ▪ Introduction
  ▪ Specifics

• eCQI Resource Center

• Ask questions or provide website feedback
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
</tr>
<tr>
<td>CVU</td>
<td>Cypress Validation Utility</td>
</tr>
<tr>
<td>DRC</td>
<td>Direct Reference Code</td>
</tr>
<tr>
<td>eCQI</td>
<td>Electronic Clinical Quality Improvement</td>
</tr>
<tr>
<td>eCQM</td>
<td>Electronic Clinical Quality Measure</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>FHIR</td>
<td>Fast Healthcare Interoperability Resources</td>
</tr>
<tr>
<td>HARP</td>
<td>HCQIS Access and Roles Profile</td>
</tr>
<tr>
<td>HCQIS</td>
<td>Health Care Quality Information Systems</td>
</tr>
<tr>
<td>IG</td>
<td>Implementation Guide</td>
</tr>
<tr>
<td>MAT</td>
<td>Measure Authoring Tool</td>
</tr>
<tr>
<td>NLM</td>
<td>National Library of Medicine</td>
</tr>
</tbody>
</table>
## Acronyms (Cont’d)

<table>
<thead>
<tr>
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<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONC</td>
<td>Office of the National Coordinator for Health Information Technology</td>
</tr>
<tr>
<td>QDM</td>
<td>Quality Data Model</td>
</tr>
<tr>
<td>QRDA</td>
<td>Quality Reporting Document Architecture</td>
</tr>
<tr>
<td>TRN</td>
<td>Technical Release Note</td>
</tr>
<tr>
<td>UMLS</td>
<td>Unified Medical Language System</td>
</tr>
<tr>
<td>VSAC</td>
<td>Value Set Authority Center</td>
</tr>
</tbody>
</table>