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

Updated December 2023

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 (DRCs) in the Value Set Authority Center (VSAC)
  - eCQM Flows

eCQM Implementation Checklist Snipet

eCQM Implementation Checklist

Receive updates on this topic

The Centers for Medicare & Medicaid Services (CMS) requires an eligible clinician (EC), eligible hospital (EH), or critical access hospital (CAH) to use the appropriate version of the eCQMs for the designated reporting/performance period for quality reporting programs using eCQMs.
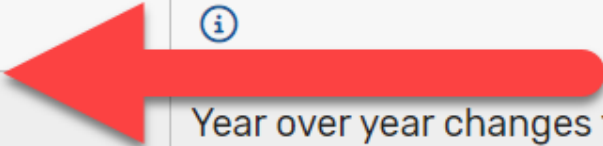
The Preparation and Implementation Checklists assume a health care practice/organization has determined which eCQMs to report. The eCQM Annual Update Implementation User Guide (PDF) provides the necessary technical steps health information technology (IT) developers, implementers, and health care organizations must take to update their systems and processes with the eCQM Annual Update for the upcoming reporting and performance periods. Please check the eCQM Standards and Tools Versions table for which version of the eCQM you should use for a specific reporting/performance period.

Preparation Checklist

▸ 1. Sign up for a Unified Medical Language System (UMLS) account to view codes within the value sets in VSAC

▸ 2. Sign up for an ONC Project Tracking Jira account to ask technical questions regarding eCQMs

▸ 3. Sign up for eCQM page change notifications on the eCQI Resource Center to receive updates on specific eCQMs

▸ 4. Review the code system versions used in the eCQM specification for the upcoming reporting/performance year

December 2023 https://ecqi.healthit.gov/ecqm-implementation-checklist

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Technical Release Notes (TRNs)

Technical Release Notes (PDF)

Year over year changes to eCQMs, incl[...]

Technical Release Notes (ZIP)

Year over year changes to eCQMs, incl[...]

TRNs outline changes in eCQM specifications as compared with the previous version.

https://ecqi.healthit.gov/eh-cah?qt-tabs_eh=0&globalyearfilter=2024&global_measure_group=3716

VSAC

VSAC houses the value sets and DRCs used by eCQMs and is maintained by the National Library of Medicine (NLM)

You must have a free Unified Medical Language System (UMLS) license to access value set details

http://vsac.nlm.nih.gov

2022 Reporting/Performance Period eCQM Value Sets, DRCs, and More

Available Downloads	Sorted by CMS ID*	
eCQM Value Sets for Eligible Hospitals Published May 04, 2023	Excel (xlsx) SVS (xml)	Ex
eCQM Value Sets for Eligible Clinicians Published May 04, 2023	Excel (xlsx) SVS (xml)	Ex
eCQM Value Sets for Hospital Outpatient Quality Reporting Published May 04, 2023	Excel (xlsx) SVS (xml)	Ex
All eCQM Value Sets (Eligible Clinicians, Eligible Hospitals and Hospital Outpatient Quality Reporting) Published May 04, 2023	Excel (xlsx) SVS (xml)	Ex
Binding Parameter Specification for eCQM Value Sets Published May 04,	Excel (xlsx)	

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

A **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.

Value Set Snipet

Snipet from NLM VSAC: https://vsac.nlm.nih.gov/

eCQM Flow Snipet: Discharged on Antithrombotic Therapy

eCQM Flows provide an overview of the population criteria components and their inclusion or exclusions into the eCQM's numerator.

2024 eCQM Flow – CMS104v12: 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.

Measure Flow Diagram

[Excerpt from the eCQM measure flows](#)
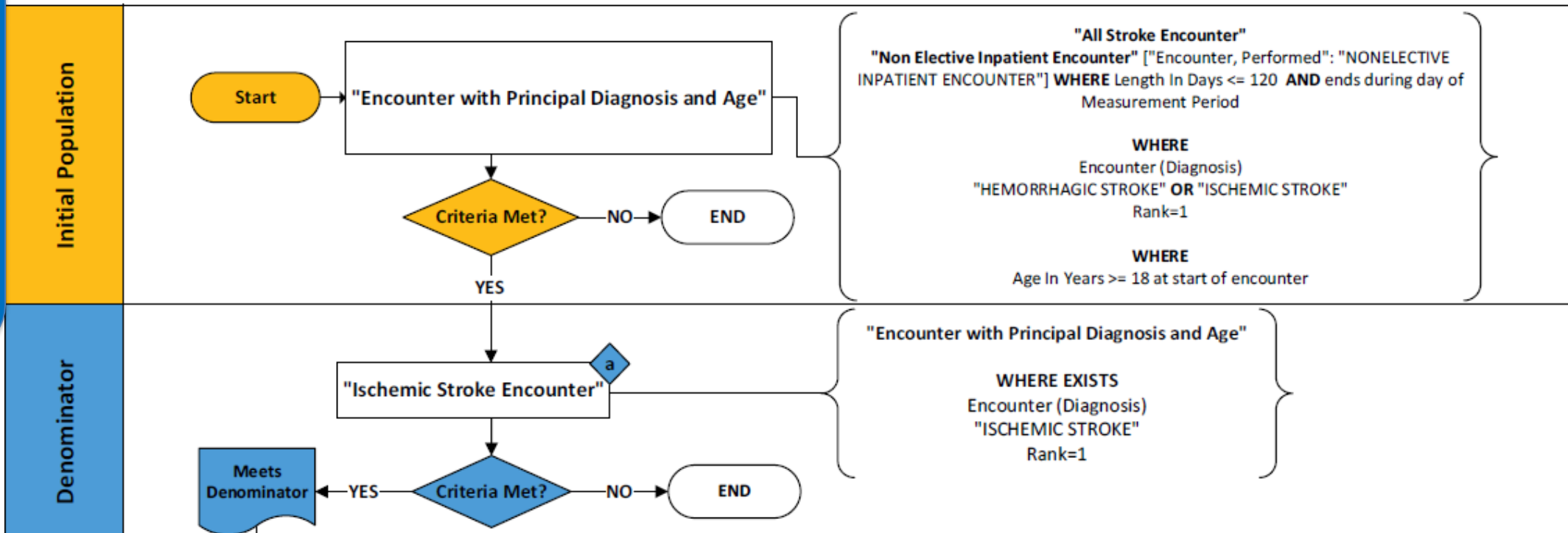
What resources are available to help me test the eCQMs?

Bonnie: An eCQM Testing Tool

BONNIE

A tool for testing electronic clinical quality measures

| USER GUIDE | USER GROUP | API GUIDE | REPORT BUG | PRIVACY POLICY |

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

https://bonnie.healthit.gov/

streamlined and efficient

pretesting for eCQMs

developer empowerment

provides specific feedback on the behavior of the CQM logic

quality reporting

supports the CMS Quality Reporting Programs

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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 Quality Data Model (QDM) - supports current QDM version of QDM-based eCQMs
  - Bonnie Prior- supported previous QDM versions of QDM-based eCQMs
  - Bonnie Fast Healthcare Interoperability Resource (FHIR) - supports FHIR-based eCQMs

Cypress Testing Tool

cypress

Rigorous & repeatable testing of Electronic Health Records

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SITE

Download Cypress v7.2.0

Cypress Demo Server

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

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

Cypress Tech Talks

NEW DIAL-IN INFORMATION

As of October 18, 2022, the Tech Talk dial-in information has changed. See below:

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 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 Quality Reporting Document Architecture (QRDA) files - The CVU+ also supports validation with the CMS QRDA Implementation Guides 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

eCQI Resource Center – eCQI Tools & Resources Library

| eCQI Tools & Resources Library | eCQM Standards and Tools Versions | Education |

The eCQI Tools and Resources Library provides a foundation for electronic quality improvement, and development, testing, certification, publication, implementation, reporting, and continuous evaluation of eCQMs. You can refine the list by selecting a category of interest and/or a role that best describes your needs, or you can also click a specific tool from the list to view additional details.

Filter Tools & Resources

BY TITLE

BY CATEGORY
- Any -

BY ROLE
- Any -

Apply   Reset

Title	Category	Role	Description
Bonnie FHIR ⬀	Development, Implementation, Testing	Health IT Developer/Vendor, Measure Developer/Steward	Bonnie is a software tool that allows eCQM developers to test and verify the behavior of their eCQM logic. The Bonnie Fast Healthcare Interoperability Resources (FHIR) application allows eCQM developers to load FHIR measures they have constructed using the Measure Authoring Tool (MAT), which helps measure developers execute the eCQM logic against the

https://ecqi.healthit.gov/ecqi-tools-key-resources

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eCQI Resource Center - eCQM Educational Resources

Get Started with eCQMs
General resources for developing, implementing, updating, and reporting eCQMs

eCQI Tools & Key Resources
Resources available include tools & resources library, standards and tools versions, and education

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

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

eCQI Glossary

Glossary

Search

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Agile development

Agile development is a term used to describe iterative software development used 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. The software development industry often contrasts agile development with traditional or waterfall development, where the planning for larger projects occurs 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 be productive in one part of a project while resolving a problem or issue in another part.

Alignment

Measure alignment includes using the same quality measures and value sets across settings and within multiple programs when possible. 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.

https://ecqi.healthit.gov/glossary

Additional Information

- Companion eCQM 101 Presentations
  - Introduction
  - Specifics
- eCQI Resource Center
- Ask questions or provide website feedback

Acronyms

Acronym	Definition
CMS	Centers for Medicare & Medicaid Services
CVU	Cypress Validation Utility
DRC	Direct Reference Code
eCQI	Electronic Clinical Quality Improvement
eCQM	Electronic Clinical Quality Measure
EHR	Electronic Health Record
FHIR	Fast Healthcare Interoperability Resources
HARP	HCQIS Access and Roles Profile
HCQIS	Health Care Quality Information Systems
IT	Information Technology
MAT	Measure Authoring Tool
NLM	National Library of Medicine
QDM	Quality Data Model
QRDA	Quality Reporting Document Architecture
TRN	Technical Release Note
UMLS	Unified Medical Language System
VSAC	Value Set Authority Center