



# How to Implement eCQM Annual Updates

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**March 2019**

# Objectives

- Determine how to identify changes in the electronic clinical quality measure (eCQM) updates that could impact an existing eCQM implementation
- Evaluate existing processes for managing workflow when implementing a quality measure
- Understand the changes in measure specifications from one eCQM Annual Update to the next

# Overview

- Overview of eCQM updates
- Preparing for the implementation of eCQM updates
- Step-by-step explanation of eCQM updates
  - Step 1: Get updates
  - Step 2: Gap analysis
  - Step 3: Data capture and workflow redesign
  - Step 4: Data extraction and eCQM calculation
  - Step 5: Validation
  - Step 6: Downstream uses of eCQM results
- Help regarding implementing eCQMs and eCQM updates
- Help regarding use of eCQMs in CMS quality programs

# eCQM Updates

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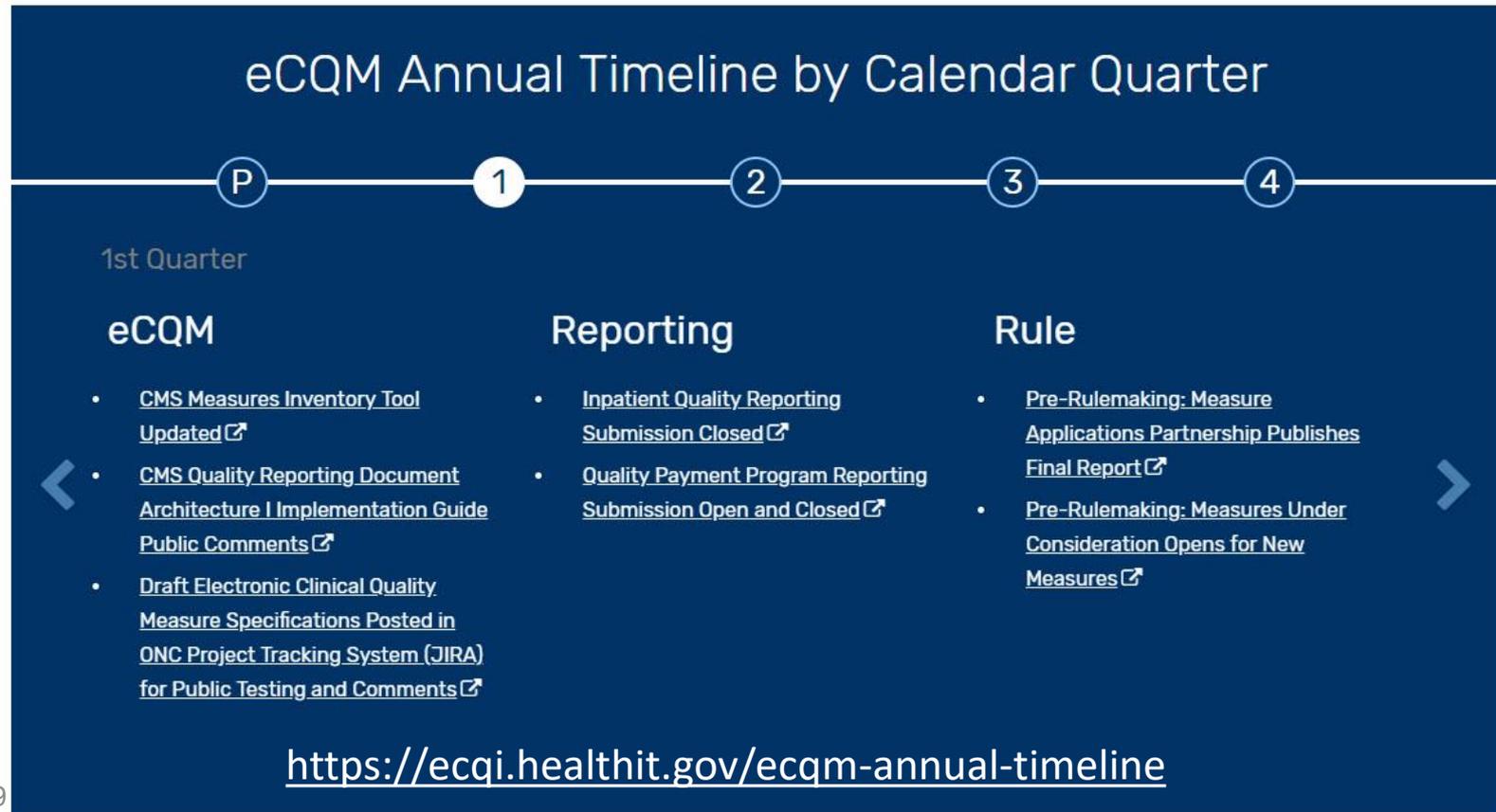
# What changes and why?

- CMS makes updates to the eCQMs adopted for submission in CMS programs annually. CMS requires the use of updated eCQMs for all its quality programs.
- Updates to eCQMs may include:
  - Codes system changes – SNOMED CT, RxNorm, etc.
  - Logic, data model, value set and direct reference code (DRC) updates
  - Clinical updates based on new research, literature, and clinical guidelines
  - Clarifications based on implementation issues reported in the Office of the National Coordinator (ONC) Project Tracking System (JIRA)
  - Changes based on advances in technical standards and data exchange protocols

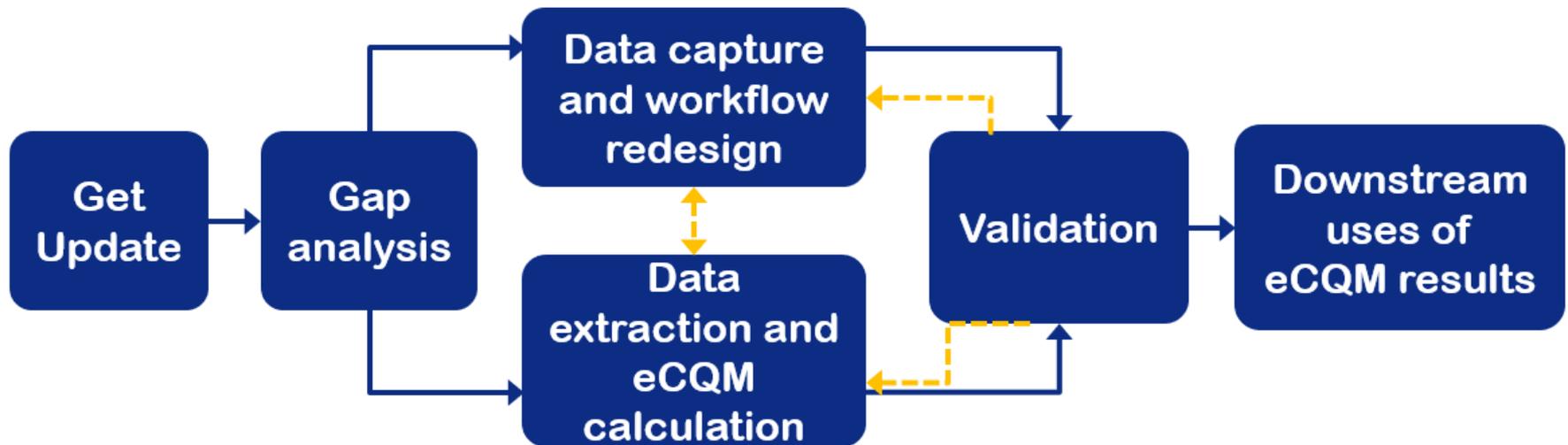
# When does it change?

## eCQM Annual Timeline

The [eCQM](#) Annual Timeline is a general guide provided for referencing scheduled updates for [eCQMs](#), tools, reporting, rules, [public comments](#) and more. The timelines listed may by subject to change.



# eCQM Implementation Process



# Preparing for the Implementation of eCQM Updates

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# eCQM Implementation Checklist: Pre-Check

## eCQM Implementation Checklist

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

This [Pre-Check and Checklist](#) (pdf) assume that a health care practice/organization has determined which measures to report on. It provides 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 update should be applied to your system for use in electronic quality reporting.

### Pre-Check

- 1) [Sign up for a Unified Medical Language System \(UMLS\) account](#)
- 2) [Sign up for a JIRA account](#)
- 3) [Sign up for eCQM page change notifications on the eCQI Resource Center](#)
- 4) [Review the code versions used in the Annual Update](#)
- 5) [Review the standards, tools, and documents used in the Annual Update](#)

Follow the Pre-Check steps on the Pre-Check list to prepare for updates to the eCQMs

<https://ecqi.healthit.gov/ecqm-implementation-checklist>

# Pre-Check

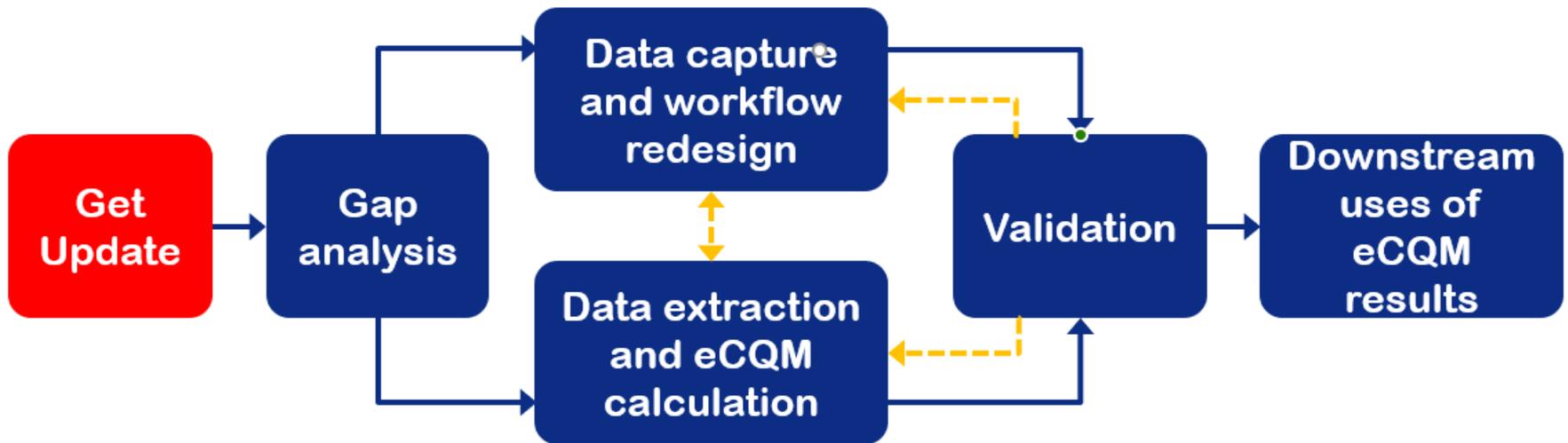
- Sign up for a [Unified Medical Language System \(UMLS\)](#) account
- Sign up for an [ONC Project Tracking System \(JIRA\)](#) account
- Sign up for an [electronic Clinical Quality Improvement \(eCQI\) Resource Center account](#)
- Subscribe to the [Eligible Professional \(EP\)/Eligible Clinician](#) and/or [Eligible Hospital \(EH\)/Critical Access Hospital \(CAH\)](#) pages for alerts when the EP/EC or EH/CAH pages have been updated
- Review the code versions used in the Annual Update
  - [eCQM Pre-Publication document](#) and the [Value Set Authority Center \(VSAC\)](#) download page
- Review the standards, tools, and documents used in the Annual Update

# **Step-by-Step Process for Implementing eCQM Updates**

## **Step 1: Get Updates**

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# Get Update



A Study of the Impact of Meaningful Use Clinical Quality Measures. Eisenberg et al., 2013.  
<http://www.aha.org/content/13/13ehrchallenges-report.pdf>

# What eCQM materials are updated?

- [Implementation Checklist](#)
- Guide for Reading eCQMs
- eCQM Tables
- Specifications (human-readable and machine-readable XMLs)
- Technical Release Notes
- Value Sets, Binding Parameter Specification (BPS), DRCs
- Measure Logic and Guidance Document
- eCQM Flows\*
- CMS Quality Reporting Document Architecture (QRDA) Implementation Guides\*

\*Usually published after the Annual Update

<https://ecqi.healthit.gov/eligible-hospital/critical-access-hospital-ecqms>  
<https://ecqi.healthit.gov/eligible-professional/eligible-clinician-ecqms>

# eCQM Implementation Checklist

## Checklist

- ▶ [1\) Access the appropriate eCQM Annual Update](#)
- ▶ [2\) Secure detailed information about each measure](#)
- ▶ [3\) Download value sets](#)
- ▶ [4\) Prepare to implement the updates by understanding changes to the eCQM](#)
- ▶ [5\) Prepare to report the updated eCQMs](#)
- ▶ [6\) Reach out for help](#)

Send suggestions for improving this checklist to the eCQI Resource Center to [ecqi-resource-center@hhs.gov](mailto:ecqi-resource-center@hhs.gov).

Follow the  
Checklist  
steps to  
implement  
updates to  
the eCQMs

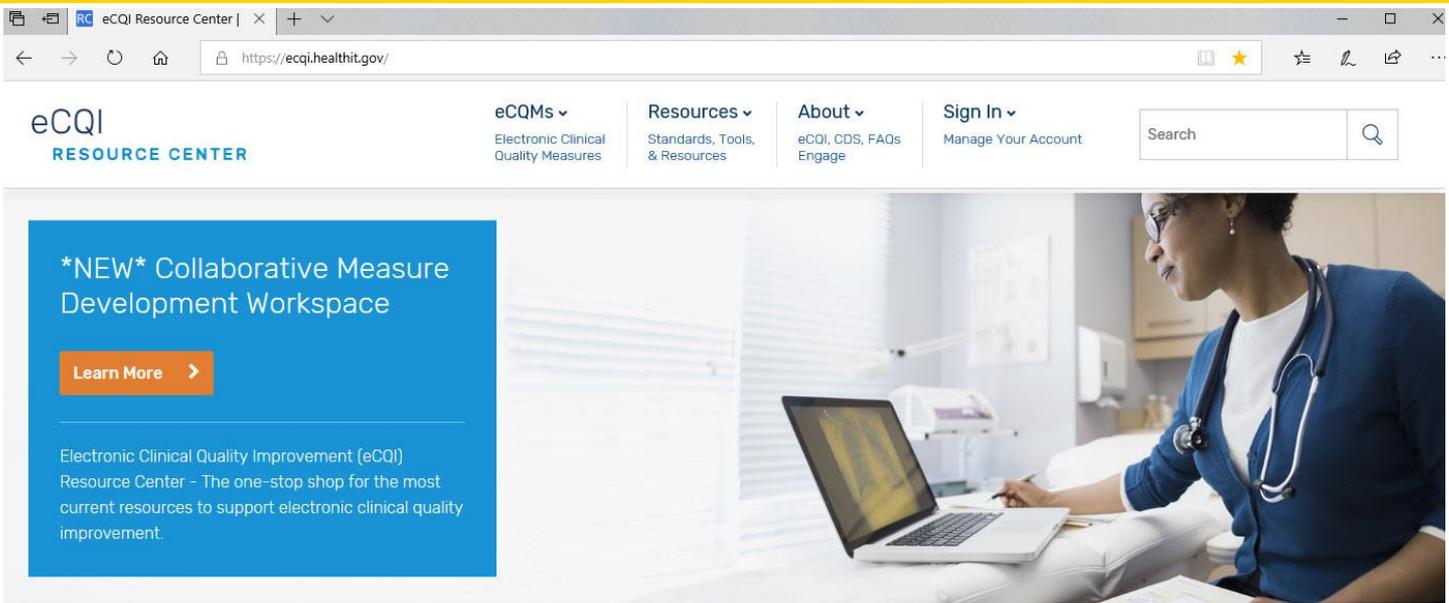
# Implementation Checklist

- Access the appropriate eCQM Annual Update on the eCQI Resource Center [EP/Eligible Clinician](#) and/or [EH/CAH](#) pages
- Secure detailed information about each measure
  - Click into an eCQM on the online table to view detailed human-readable information on the measure
  - Download and open zip files for the individual eCQMs your organization uses
  - Open the Hyper Text Markup Language (HTML) document that contains the human readable measure specification description
  - Review Health Quality Measure Format (HQMF) document (including specific reading instructions)
  - Review data elements for the eCQM in the [eCQM Data Element Repository](#) (DERep)

# Implementation Checklist (Cont'd)

- Download Value Sets
  - Download corresponding annual update value sets, DRCs, and BPS from the [VSAC](#) using your UMLS license log in
- Prepare to implement the updates by understanding changes to the eCQMs
- Prepare to report the updated eCQMs
- Reach out for help

# Where do I find the updated specifications and materials?



## Featured Resources



Eligible Professional / Eligible Clinician eCQMs



Eligible Hospitals / Critical Access Hospital eCQMs



Educational Resources



# Finding EH/ CAH eCQMs and Materials

## Eligible Hospital / Critical Access Hospital eCQMs

The electronic clinical quality measures (eCQMs) are updated for calendar year 2019 reporting for the Hospital Inpatient Quality Reporting (IQR) Program and the Medicare and Medicaid Promoting Interoperability programs for Eligible Hospitals and Critical Access Hospitals. Measures will not be eligible for 2019 reporting unless and until they are proposed and finalized through notice-and-comment rulemaking for each applicable program.

Each year, CMS makes updates to the eCQMs adopted for submission in CMS programs. CMS requires the use of updated eCQMs for all its quality programs because they include updated codes, logic corrections, and clarifications. Reporting eCQM data to the Hospital IQR Program and for aligned credit for reporting of eCQMs to the Promoting Interoperability programs requires that hospitals use the most current version of the eCQMs identified below for the applicable reporting period.

In addition, CMS may publish addenda to the eCQM updates. The addenda provide updates to the codes used in value sets based on code system changes.

CMS has updated eCQMs for potential inclusion in the following programs:

- [Hospital Inpatient Quality Reporting \(IQR\) Program](#) <sup>if</sup>
  - [Medicaid Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals](#) <sup>if</sup> (formerly known as the Medicaid Electronic Health Record (EHR) Incentive Program)
  - [Medicare Promoting Interoperability Electronic Health Record \(EHR\) Incentive Programs for Eligible Hospitals and Critical Access Hospitals](#) <sup>if</sup> (formerly known as the Medicare EHR Incentive Program)
- Use the eCQM Materials and follow the [eCQM Implementation Checklist](#) to update your electronic health record and processes for eCQM use and reporting.



Select Reporting Period Search

2019

### 2019 REPORTING PERIOD ELIGIBLE HOSPITAL / CRITICAL ACCESS HOSPITAL ECQMS

[View Archive](#)

For Use <sup>if</sup>	eCQM Materials	Published <sup>if</sup>	File Type <sup>if</sup>
2019 Q1-Q4	<a href="#">Implementation Checklist eCQM Annual Update</a>	May 2018	link
2019 Q1-Q4	<a href="#">Guide for Reading eCQMs</a>	May 2018	pdf
2019 Q1-Q4	<a href="#">Eligible Hospitals Table of eCQMs</a>	May 2018	pdf
2019 Q1-Q4	<a href="#">eCQM Specifications for Eligible Hospitals</a>	May 2018	zip
2019 Q1-Q4	<a href="#">eCQM Value Sets</a> <sup>if</sup>	May 2018	link
2019 Q1-Q4	<a href="#">Binding Parameter Specification (BPS)</a> <sup>if</sup>	May 2018	zip
2019 Q1-Q4	<a href="#">eCQM Measure Logic Guidance v2.0</a>	May 2018	pdf
2019 Q1-Q4	<a href="#">Technical Release Notes (pdf)</a>	May 2018	pdf

# Finding EH/CAH eCQMs and Materials (Cont'd)

Select Reporting Period Search

2019

2019 REPORTING PERIOD ELIGIBLE HOSPITAL / CRITICAL ACCESS HOSPITAL ECQMS [View Archive](#)

For Use	eCQM Materials	Published
2019 Q1-Q4	<a href="#">Implementation Checklist eCQM Annual Update</a>	May 2018
2019 Q1-Q4	<a href="#">Implementation Checklist eCQM Addendum</a>	
2019 Q1-Q4	<a href="#">Guide for Reading eCQMs (pdf)</a>	
2019 Q1-Q4	<a href="#">Eligible Hospitals Table of eCQMs (pdf)</a>	Jun 2018
2019 Q1-Q4	<a href="#">eCQM Specifications for Eligible Hospitals (zip)</a>	May 2018
2019 Q1-Q4	<a href="#">eCQM Value Sets Addendum </a>	Sep 2018
2019 Q1-Q4	<a href="#">eCQM Direct Reference Codes List </a>	Sep 2018
2019 Q1-Q4	<a href="#">eCQM Value Set Addendum FAQs (pdf)</a>	Jul 2018
2019 Q1-Q4	<a href="#">Binding Parameter Specification (BPS) Addendum </a>	Sep 2018
2019 Q1-Q4	<a href="#">eCQM Measure Logic Guidance v2.0 (pdf)</a>	May 2018
2019 Q1-Q4	<a href="#">Technical Release Notes (code system updates only) Addendum (pdf)</a>	Nov 2018
2019 Q1-Q4	<a href="#">Technical Release Notes Addendum (pdf)</a>	Nov 2018
2019 Q1-Q4	<a href="#">Technical Release Notes (code system updates only) Addendum (zip)</a>	Sep 2018
2019 Q1-Q4	<a href="#">Technical Release Notes Addendum (zip)</a>	Sep 2018
2019 Q1-Q4	<a href="#">eCQM Flows (zip)</a>	Sep 2018
2019 Q1-Q4	<a href="#">CMS QRDA I Implementation Guide for Hospital Quality Reporting (pdf)</a>	May 2018



# Finding EH/CAH eCQMs and Materials (Cont'd)



(USHIK Links are not updated for the 2019 Reporting Period)

Measure Name ▼	Short Name ◆	CMS eCQM ID ◆	NQE ID ◆	Meaningful Measure Area ◆
<a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	STK-03	CMS71v8	None	Preventive Care
<a href="#">Antithrombotic Therapy By End of Hospital Day 2</a>	STK-05	CMS72v7	None	Preventive Care
<a href="#">Assessed for Rehabilitation</a>	STK-10	CMS102v7	None	Preventive Care
<a href="#">Discharged on Antithrombotic Therapy</a>	STK-02	CMS104v7	None	Preventive Care
<a href="#">Discharged on Statin Medication</a>	STK-06	CMS105v7	None	Preventive Care
<a href="#">Elective Delivery</a>	PC-01	CMS113v7	0469	Preventive Care
<a href="#">Exclusive Breast Milk Feeding</a>	PC-05	CMS9v7	0480	Preventive Care
<a href="#">Hearing Screening Prior To Hospital Discharge</a>	EHDI-1a	CMS31v7	1354	Preventive Care
<a href="#">Home Management Plan of Care (HMPC) Document Given to Patient/Caregiver</a>	CAC-3	CMS26v6	None	Preventive Care
<a href="#">Intensive Care Unit Venous Thromboembolism Prophylaxis</a>	VTE-2	CMS190v7	0372	Preventive Care
<a href="#">Median Admit Decision Time to ED Departure Time for Admitted Patients</a>	ED-2	CMS111v7	0497	Patient's Experience of Care
<a href="#">Median Time from ED Arrival to ED Departure for Admitted ED Patients</a>	ED-1	CMS55v7	0495	Patient's Experience of Care
<a href="#">Median Time from ED Arrival to ED Departure for Discharged ED Patients</a>	ED-3	CMS32v8	0496	Patient's Experience of Care
<a href="#">Primary PCI Received Within 90 Minutes of Hospital Arrival</a>	AMI-8a	CMS53v7	None	Preventive Care
<a href="#">Stroke Education</a>	STK-08	CMS107v7	None	Preventive Care
<a href="#">Venous Thromboembolism Prophylaxis</a>	VTE-1	CMS108v7	0371	Preventive Care

# Example: Individual Measure Page - Downloadable Measure Specifications and DERep

[CMS22v7](#)

[CMS2v8](#)

[CMS50v7](#)

[CMS52v7](#)

[CMS56v7](#)

[CMS65v8](#)

[CMS66v7](#)

[CMS68v8](#)

[CMS69v7](#)

[CMS74v8](#)

[CMS75v7](#)

[CMS82v6](#)

[CMS90v8](#)

professionals or eligible clinicians who see patients towards the end of the reporting period (ie, December in particular), should communicate the consultant report as soon as possible in order for those patients to be counted in the measure [numerator?](#). Communicating the report as soon as possible will ensure the data is included in the submission to CMS.

Data Elements

**Quality ID:** 374

**Meaningful Measure:** [Transfer of Health Information and Interoperability](#)

**Data Elements:** [CMS50v7 - Closing the Referral Loop: Receipt of Specialist Report](#)

## Specifications

[CMS50v7.html](#)

[CMS50v7.zip](#)

[CMS50v7\\_TRN.xlsx](#)

Downloadable specifications

## Release Notes

Header

- Updated Version Number.

**Measure Section:** eMeasure Version number

# Measure Specification

- Contents of the measure specifications:
  - Human-Readable HTML file - Provides high level understanding of the element definition and the underlying logic used in measure calculation
  - Machine-Readable (XML) - Translates metadata from human-readable header into computer code, the XML also contains code to reflect the population criteria
  - Technical Release Notes (TRNs) - Provide a list of all changes by measure and identifies the updates that require action

# Updated eCQM Value Sets

- The National Library of Medicine publishes updates to the eCQM value sets to align with the most recent releases to terminologies, including, but not limited to:
  - International Classification of Diseases (ICD)-10 Clinical Modification (CM) and Procedure Coding System (PCS)
  - SNOMED CT
  - Logical Observation Identifiers Names and Codes (LOINC)
  - RxNorm
- The changes to the value sets consist of
  - Deletion of expired codes
  - Addition of relevant replacement codes
  - Addition of newly available codes that represent concepts consistent with the intent of the value set and corresponding measure(s)

<https://vsac.nlm.nih.gov/download/ecqm?rel=2019>

# Where do I find the updated value sets?

The screenshot shows the NIH Value Set Authority Center (VSAC) website. The 'Download' button in the top navigation bar is highlighted with a red box. A red arrow points from this button to the 'VSAC Downloadable Resources' section. This section contains a list of downloadable resources, including 'CMS eCQM Value Sets', 'C-CDA Value Sets', and 'CDCREC Roll-up codes'. A sub-section for 'Centers for Medicare & Medicaid (CMS) Electronic Clinical' is expanded, showing a table of available downloads for 'September 2018 Release eCQM Value Sets Publication Date'. The table lists various eCQM value sets with their publication dates and download options (Excel, XML, etc.).

Welcome | Search Value Sets | **Download**

## 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 a joint effort of the National Library of Medicine, the National Center for Information Technology and the Center for Clinical Quality Improvement.

The VSAC provides downloadable access to the numerical values (codes) and their associated meanings. These values are used to define clinical concepts used in electronic health records.

The content of the VSAC will gradually be updated as new value sets are added.

**Viewing or downloading value sets includes codes included in the value sets.**

The **Data Element Catalog** contains information about the value sets.

**VSAC Downloadable Resources**

This page contains groups of value sets designated for a particular program usage. You can search for value sets by program usage, value set name, or value set code.

- CMS eCQM Value Sets
- C-CDA Value Sets
- CDCREC Roll-up codes

### Centers for Medicare & Medicaid (CMS) Electronic Clinical

- 2019 Reporting/Performance Period eCQM Value Sets
- September 2018 Release eCQM Value Sets Publication Date

Note: Sign In to access all files  
Expansion Version: eCQM Update 2018-09-17

Available Downloads	Sorted by
eCQM Value Sets for Eligible Hospitals Published September 17, 2018	Excel (xlsx)
eCQM Value Sets for Eligible Professionals and Eligible Clinicians Published September 17, 2018	Excel (xlsx)   SVS (xml)
All eCQM Value Sets (Eligible Professionals, Clinicians and Hospitals) Published September 17, 2018	Excel (xlsx)   SVS (xml)   Excel (xlsx)   SVS (xml)   SVS (text)   Excel (xlsx)
Binding Parameter Specification for eCQM Value Sets Published September 17, 2018	Excel (xlsx)
Retired/Legacy Codes Currently in eCQM Value Sets Published September 17, 2018	Excel (xlsx)

The **VSAC** publishes updated eCQM value sets annually. The **Downloadable Resource Table** provides prepackaged downloads for the most recently updated and released eCQM value sets, as well as for previously released versions.

# Finding Value Sets (Cont'd)

Download value sets by measure, value set name, or quality data model category

Available Downloads	Sorted by CMS ID*	Sorted by Value Set Name*	Sorted by Quality Data Model Category*
Value Sets for Eligible Professionals and Hospitals Published September 17, 2018	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a>	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a> <a href="#">SVS (text)</a>	<a href="#">Excel (xlsx)</a>
Value Sets for Eligible Professionals and Eligible Clinicians Published September 17, 2018	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a>	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a> <a href="#">SVS (text)</a>	<a href="#">Excel (xlsx)</a>
All eCQM Value Sets (Eligible Professionals, Clinicians and Hospitals) Published September 17, 2018	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a>	<a href="#">Excel (xlsx)</a> <a href="#">SVS (xml)</a> <a href="#">SVS (text)</a>	<a href="#">Excel (xlsx)</a>



CMS ID	Value Set Name	Value Set OID	QDM Category	Definition Version	Expansion Version
CMS107v7	Activation of Emergency Medical System Education	2.16.840.1.113883.3.117.1.7.1.377	Communication	20170725	eCQM Update 2018-09-17
CMS107v7	Activation of Emergency Medical System Education	2.16.840.1.113883.3.117.1.7.1.377	Communication	20170725	eCQM Update 2018-09-17
CMS107v7	Comfort Measures	1.3.6.1.4.1.33895.1.3.0.45	Intervention	20160331	eCQM Update 2018-09-17

# Updated QRDA Implementation Guides (IGs)

## QRDA - Quality Reporting Document Architecture

[About](#)

[Tools & Resources](#)

[Previous Versions](#)

[Education](#)

[Connect](#)

The Quality Reporting Document Architecture (QRDA) is the data submission standard used for a variety of quality measurement initiatives. QRDA creates a standard method to report [quality measure](#) results in a structured, consistent format for exchanging data between systems.

### Current QRDA Reference and Implementation Guides:

#### 2019 Reporting and Performance Period

The 2019 CMS QRDA Category I Implementation Guide for [Eligible Hospitals](#) for 2019 eCQM reporting is based on the [HL7](#) Implementation Guide for Clinical Document Architecture (CDA) Release 2: Quality Reporting Document Architecture (QRDA) Category I, Release 1, Standard for Trial Use Release 5 (published December 2017).

- [2019 CMS QRDA I Implementation Guide for Hospital Quality Reporting \(pdf\)](#)
- [2019 CMS QRDA I Schematrons and Sample Files for Hospital Quality Reporting \(zip\)](#)

The 2019 CMS QRDA Category III Implementation Guide for [Eligible Clinicians](#) and [Eligible Professionals](#) for 2019 eCQM reporting is based on the HL7 Implementation Guide for Clinical Document Architecture (CDA) Release 2: Quality Reporting Document Architecture (QRDA) Category III, Release 1, Standard for Trial Use Release 2.1 (published July 2017).

- [2019 CMS QRDA III Implementation Guide for Eligible Clinicians and Eligible Professionals \(pdf\)](#)
- [2019 CMS QRDA III Schematrons and Sample Files for Eligible Clinicians and Eligible Professionals \(zip\)](#)
- [Addendum to 2019 CMS QRDA III Implementation Guide for Eligible Clinicians and Eligible Professionals \(pdf\)](#)

Find most current QRDA IGs here and linked in the eCQM Materials on the measure pages

# Where do I find eCQM Standards and Tools Versions Changes?

The screenshot shows the eCQI Resource Center website. The main heading is "eCQI Tools & Key Resources". Below this, there are three tabs: "About", "eCQM Standards and Tools Versions" (which is selected), and "eCQI Tools and Resources Library". A paragraph explains that the standards and tools versions listed are those used to create and/or support the implementation of the specific reporting/performance period specifications.

Reporting/Performance Period: 2019 [Apply] [Reset]

Reporting/Performance Period	eCQM Annual Update	Tool and Resource Versions	Standard Versions
2019	<a href="#">EH/CAH Spring 2018</a> <a href="#">EP/Eligible Clinicians Spring 2018</a>	<a href="#">MAT V5.5.0</a> <a href="#">Measure Logic Document V2.0 (pdf)</a> <a href="#">Cypress V4.0.1</a> <a href="#">Bonnie V2.0.4</a> <a href="#">CQL-to-ELM Translator (v 1.2.16)</a>	<a href="#">QDM V5.3 (pdf)</a> <a href="#">HL7 Version 3 IG: CQL-based HQMF R1 STU 2.1</a> <a href="#">CQL R1 STU 2</a> <a href="#">HL7 V3 HQMF Normative Release 1</a> <a href="#">HL7 ORDA Version ORDA I R1 STU R5</a> <a href="#">HL7 ORDA Version ORDA III R1 STU R2.1</a> <a href="#">2019 CMS ORDA I IG for HQR (pdf)</a> <a href="#">2019 CMS ORDA III IG FOR EP/Eligible Clinicians (pdf)</a> <a href="#">Addendum to 2019 ORDA III Implementation Guide (pdf)</a>

[https://ecqi.healthit.gov/ecqi-tools-key-resources#quicktabs-tabs\\_tools2](https://ecqi.healthit.gov/ecqi-tools-key-resources#quicktabs-tabs_tools2)

Download the pdf version of the table showing reporting/performance periods 2015 to the current year.

# Where do I find eCQM Tools and Resources?



## Tools & Resources

The eCQM Informational Tools, Resources and Collaboration (InfoTRAC) referenced in this section are openly available and are provided for stakeholder use. They provide a foundation for the development, implementation, reporting, help, and feedback of quality measures and their improvement.



## Find the Tools and Resources You Need

You can browse and search all of the tools and resources by visiting the [eCQI Tools and Resources Library](https://ecqi.healthit.gov/ecqi-tools-key-resources#quicktabs-tabs_tools1).

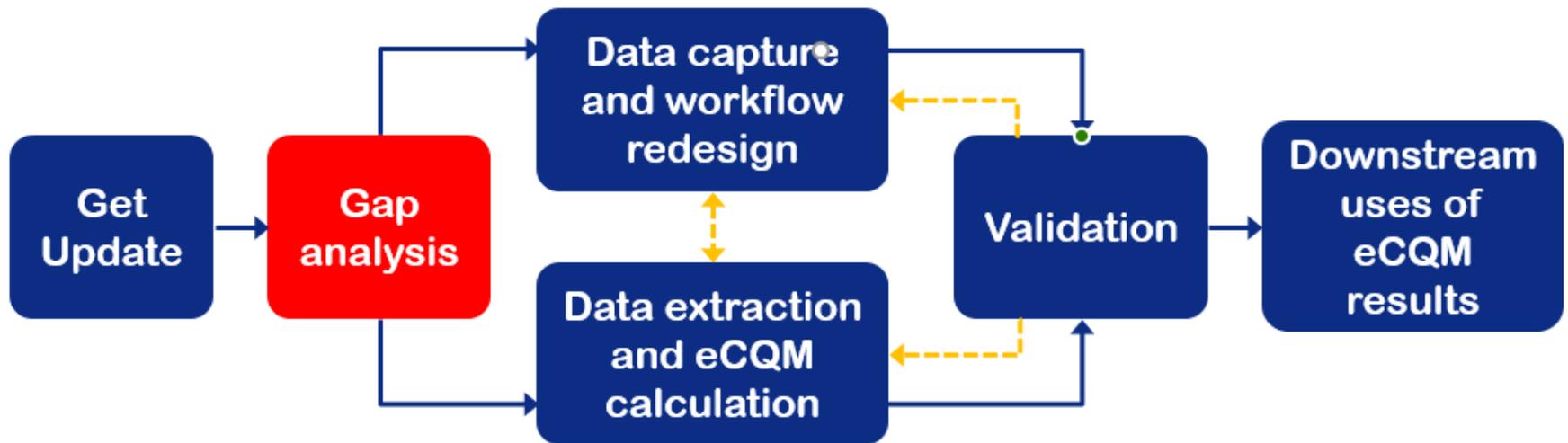
[https://ecqi.healthit.gov/ecqi-tools-key-resources#quicktabs-tabs\\_tools1](https://ecqi.healthit.gov/ecqi-tools-key-resources#quicktabs-tabs_tools1)

# **Step-by-Step Process for Implementing eCQM Updates**

## **Step 2: Gap Analysis**

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# Gap Analysis



A Study of the Impact of Meaningful Use Clinical Quality Measures. Eisenberg et al., 2013.

<http://www.aha.org/content/13/13ehrchallenges-report.pdf>

# Gap Analysis: Analyzing Specifications

- Review eCQM Updates:
  - Are there new data elements that you need to capture?
  - Are there changes to the measure logic that may have workflow implications?
  - Are there changes that may impact calculation such as updates to inclusion/exclusion criteria?

# What are the changes for my measures?

Select Reporting Period Search

2019

2019 Reporting Period Eligible Hospital / Critical Access Hospital eQMs

For Use 	eCQM Materials	
2019 Q1-Q4	Implementation Checklist eCQM Annual Update	
2019 Q1-Q4	Implementation Checklist eCQM Addendum	
2019 Q1-Q4	Guide for Reading eQMs (pdf)	
2019 Q1-Q4	Eligible Hospitals Table of eQMs (pdf)	
2019 Q1-Q4	eCQM Specifications for Eligible Hospitals (zip)	
2019 Q1-Q4	eCQM Value Sets Addendum 	
2019 Q1-Q4	Binding Parameter Specification (BPS) Addendum 	
2019 Q1-Q4	eCQM Measure Logic Guidance v2.0 (pdf)	May 2018
2019 Q1-Q4	Technical Release Notes (code system updates only) Addendum (pdf)	Nov 2018
2019 Q1-Q4	Technical Release Notes Addendum (pdf)	Nov 2018
2019 Q1-Q4	Technical Release Notes (code system updates only) Addendum (zip)	Sep 2018
2019 Q1-Q4	Technical Release Notes Addendum (zip)	Sep 2018
2019 Q1-Q4	<u><a href="#">eCQM Flows</a></u> (zip)	Sep 2018
2019 Q1-Q4	CMS QRDA I Implementation Guide for Hospital Quality Reporting (pdf)	May 2018
2019 Q1-Q4	CMS QRDA I Schematrons, and Sample Files for Hospital Quality Reporting (zip)	May 2018

**Technical Release Notes** provide a list of all changes by measure so you can focus on those measures that you report on and identify the updates that require action

# United States Health Information Knowledgebase (USHIK) Comparing eCQMs

Electronic Clinical Quality Measure Comparison

Action	eCQM Name	Organization
<input type="checkbox"/>	(CMS71v2, December 2012 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input type="checkbox"/>	(CMS71v3, April 2013 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input type="checkbox"/>	(CMS71v4, April 2014 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input type="checkbox"/>	(CMS71v5, June 2015 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input checked="" type="checkbox"/>	(CMS71v6, April 2016 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input checked="" type="checkbox"/>	(CMS71v7, May 2017 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)
<input type="checkbox"/>	(CMS71v8, eCQM Update 2018-05-04) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	Centers for Medicare & Medicaid Services (CMS)

Compare

**USHIK** provides side by side comparisons of measures and value set changes

Remove Shared Attribute Highlighting Remove Unshared Attribute Highlighting

Identifying Attributes	Population Criteria	QDM Data Elements & Codes
<b>Metadata Attribute</b>	(CMS71v6, April 2016 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>	(CMS71v7, May 2017 EH) <a href="#">Anticoagulation Therapy for Atrial Fibrillation/Flutter</a>
ID:	71	71
Measure Version:	6	7
NQF:	0436	Not Applicable

# eCQM Data Element Repository (DERep)

## eCQM Data Element Repository (DERep)

The eCQM Data Element Repository (DERep) provides all the data elements associated with published and tested eCQMs for use in CMS quality reporting programs as well as the definitions and clinical focus for each data element. An end user can sort information by data element, eCQM, union, attribute, or QDM category and datatype data element.

The data elements provided are for use by Eligible Professional/Eligible Clinician and Eligible Hospital/Critical Access Hospital eCQM quality reporting and performance periods. Information contained within the DERep is derived from the eCQM specifications, Quality Data 5.3, and the Value Set Authority Center (VSAC). Each eCQM data element includes information about the value set, the QDM datatype, attributes used by that data element. *Note: The data element descriptions may be updated in the DERep as compared to the VSAC. These will ultimately be in sync with the descriptions contained in the VSAC in Spring 2019.*

Select a Filter Option

Search

Sort by

Order

Apply

Reset

Apply to see results. Filter definitions are below:

The eCQM data elements provide a listing of all data elements used in eCQMs for 2019 CMS quality reporting and performance periods. Each eCQM data element includes information about the value set, the QDM datatype, and the QDM attributes used by that data element. Note: DERep data element descriptions may not yet be updated in the VSAC. The DERep and VSAC data element descriptions will be synchronized in Spring 2019.

### eCQM

The eCQM filter currently provides a list of 24 eCQMs in CMS programs – 14 Eligible Hospital/Critical Access Hospital and 8 Eligible Professional/

The eCQM DERep provides all the data elements associated with published and tested eCQMs for use in CMS quality reporting programs including definitions and clinical focus for each data element.

# How should I implement changes?

Select Reporting Period Search

2019

Apply

Reset

## 2019 Reporting Period Eligible Hospital / Critical Access Hospital eCQMs

For Use	eCQM Materials
2019 Q1-Q4	Implementation Checklist eCQM Annual Update
2019 Q1-Q4	Implementation Checklist eCQM Addendum
2019 Q1-Q4	Guide for Reading eCQMs (pdf)
2019 Q1-Q4	Eligible Hospitals Table of eCQMs (pdf)
2019 Q1-Q4	eCQM Specifications for Eligible Hospitals (zip)
2019 Q1-Q4	eCQM Value Sets Addendum
2019 Q1-Q4	Binding Parameter Specification (BPS) Addendum
2019 Q1-Q4	eCQM Measure Logic Guidance v2.0 (pdf)
2019 Q1-Q4	Technical Release Notes (code system updates only) Addendum (pdf)
2019 Q1-Q4	Technical Release Notes Addendum (pdf)
2019 Q1-Q4	Technical Release Notes (code system updates only) Addendum (zip)
2019 Q1-Q4	Technical Release Notes Addendum (zip)
2019 Q1-Q4	eCQM Flows (zip)
2019 Q1-Q4	CMS QRDA I Implementation Guide for Hospital Quality Reporting (pdf)
2019 Q1-Q4	CMS QRDA I Schematrons, and Sample Files for Hospital Quality Reporting (zip)

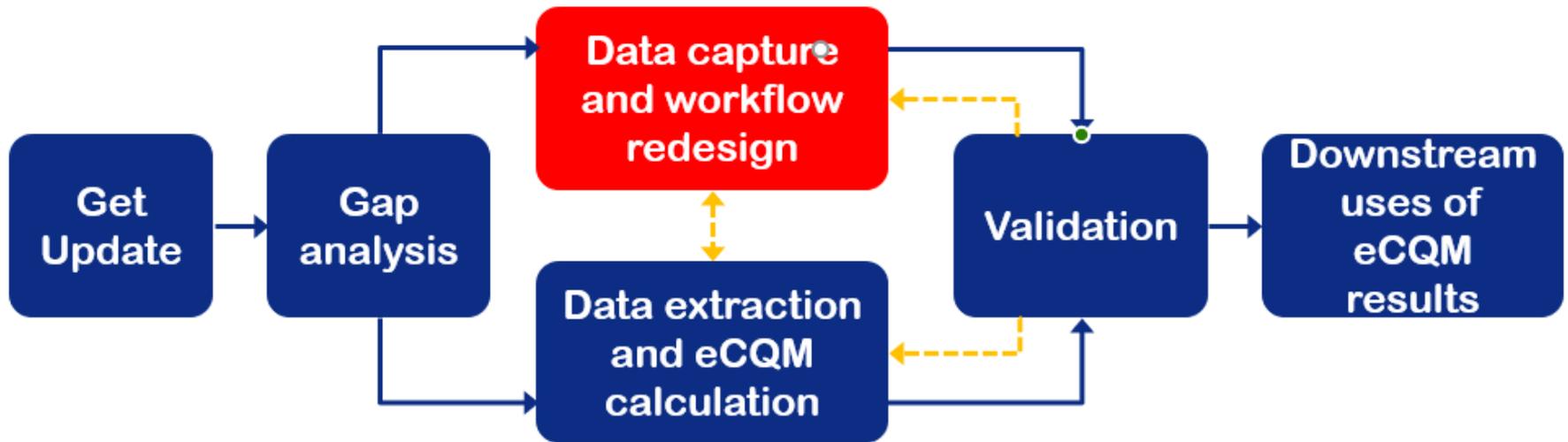
The eCQM Measure Logic and Implementation Guidance document provides information for those using and/or implementing the eCQMs

# **Step-by-Step Process for Implementing eCQM Updates**

## **Step 3: Data Capture and Workflow Redesign**

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# Data Capture and Workflow Redesign



A Study of the Impact of Meaningful Use Clinical Quality Measures. Eisenberg et al., 2013.

<http://www.aha.org/content/13/13ehrchallenges-report.pdf>

# Workflow Analysis

- Definitions of workflow vary:
  - The flow of work through space and time, where work is comprised of three components: inputs are transformed into outputs.<sup>1</sup>
  - The activities, tools, and processes needed to produce or modify work, products, or services. More specifically, clinical workflow encompasses all of the 1) activities, 2) technologies, 3) environments, 4) people, and 5) organizations

<sup>1</sup>Carayon P, Karsh, BT. Workflow toolkit and lessons in user-centered design. Paper presented at the AHRQ Annual Health IT Grantee and Contractor Meeting, 2010 June 2-4; Washington, DC.

<sup>2</sup>Niazkhani Z, van der Sijs H, Pirnejad H, Redekop W, Aarts J. Same system, different outcomes: Comparing the transitions from two paper-based systems to the same computerized physician order entry system. International Journal of Medical Informatics 2009; 78(3): 170-181.

# Consider Different Workflow Interactions

- Clinic-level workflow: the flow of information, in paper or electronic formats, among people at a practice or clinic
- Intra-visit workflow: workflow during a patient visit
- Inter-organizational workflow: workflow between healthcare organizations
- Cognitive workflow: the workflow in the mind

# Data Capture and Workflow Redesign

- Data Capture
  - Consider new query build in your electronic health record (EHR)
  - Interface to bring data from disparate application into certified EHR
  - Deploy alerts, reminders, and order sets judiciously
- Workflow Redesign
  - Work with subject matter experts to determine where/how data should be captured (e.g., cardiovascular services)
  - Evaluate aspects of care coordination or transitions of care
- Workflow Assessment for Health Information Technology (IT) Toolkit
  - <https://healthit.ahrq.gov/health-it-tools-and-resources/evaluation-resources/workflow-assessment-health-it-toolkit>

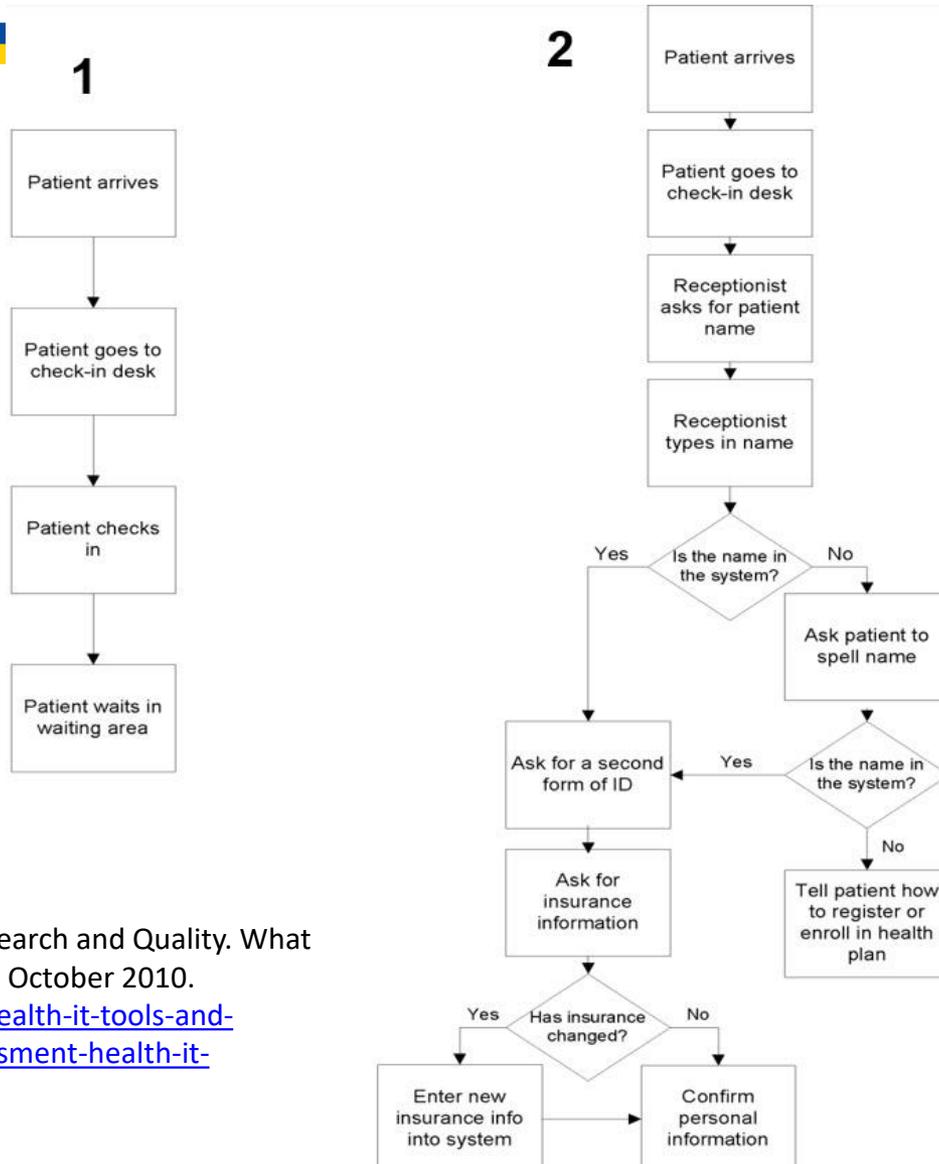
# Workflow Analysis Process

- Step 1: Decide what processes to examine
- Step 2: Create a preliminary flowchart
- Step 3: Add detail to the flowchart
- Step 4: Determine who you need to observe and interview
- Step 5: Perform observations and interviews

# Goals of a Flowchart

- Shows how processes *really* happen, as opposed to how they are supposed to happen or how we expect they will happen
- Allows a better understanding of what contributes to different types of flows for the same processes
- Helps to identify ways to improve the flows
- Can illustrate ways that health IT will affect workflows

# Example: Detailed Flowcharts



Agency for Healthcare Research and Quality. What Is Workflow. Rockville MD. October 2010.  
<http://healthit.ahrq.gov/health-it-tools-and-resources/workflow-assessment-health-it-toolkit/presentations>

# Example: Detailed Flowcharts

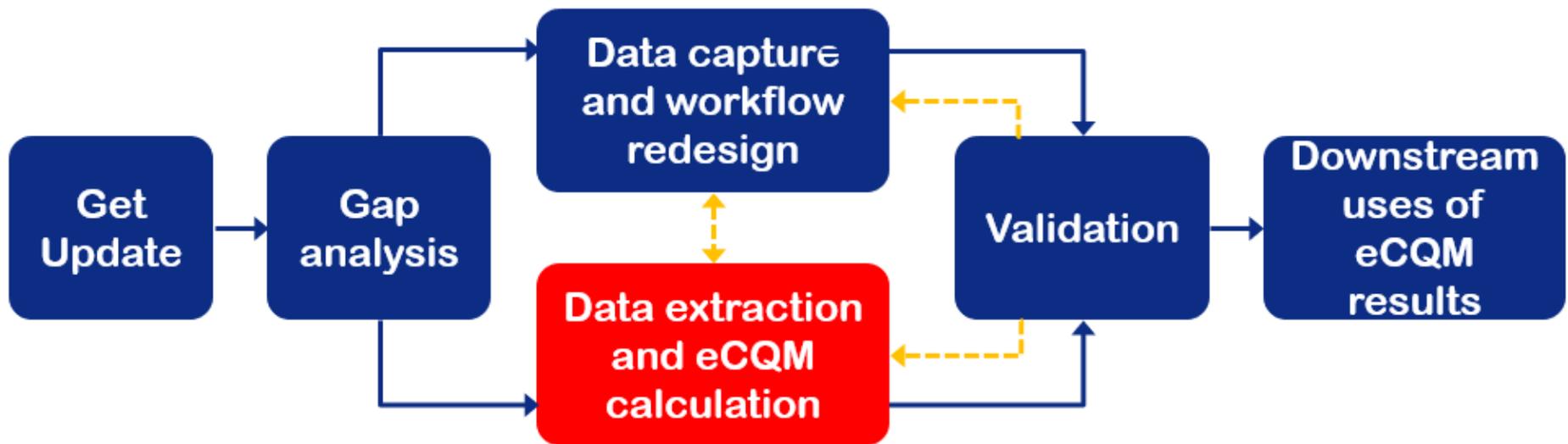
- Both flowcharts show the workflow of “patient check-in”
- Both are accurate descriptions of the same process at a particular clinic, but only figure #2 shows the details of what the workflow really is
- The details of the workflow will change when you implement health IT
  - If you don’t understand the details, you cannot plan for the changes that will come

# **Step-by-Step Process for Implementing eCQM Updates**

## **Step 4: Data Extraction and eCQM Calculation**

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# Data Extraction and eCQM Calculation



A Study of the Impact of Meaningful Use Clinical Quality Measures. Eisenberg et al., 2013.

<http://www.aha.org/content/13/13ehrchallenges-report.pdf>

# Data Extraction and eCQM Calculation

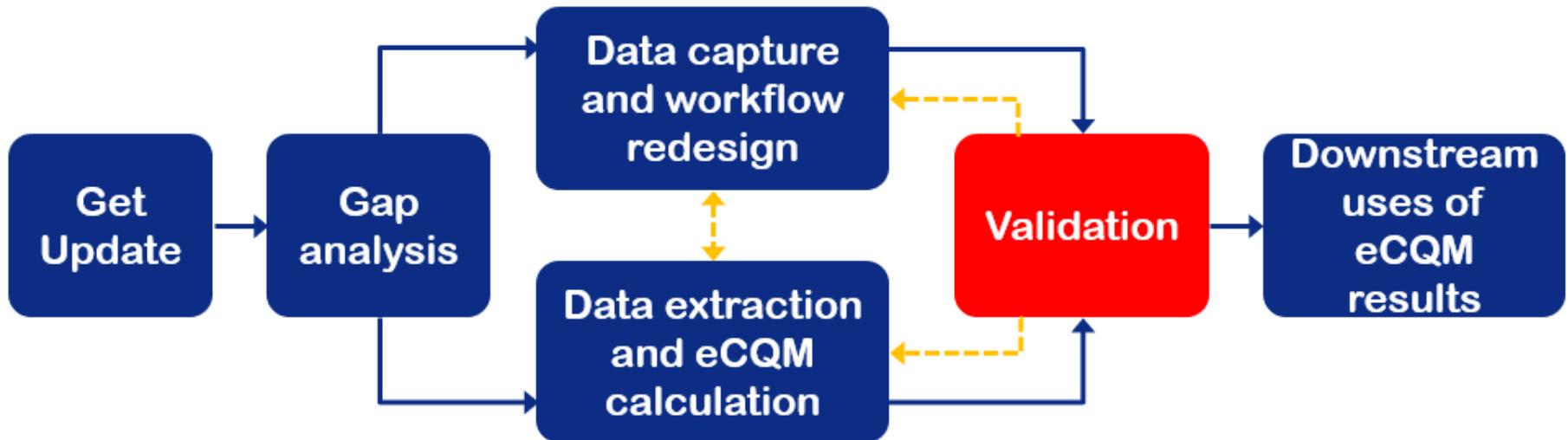
- Once data are available, move forward with data extraction and calculation
- Continue iterative process of validation
- Make tweaks to data capture and/or workflow after validation if necessary
- Update internal documentation based on workflow changes



# **Step-by-Step Process for Implementing eCQM Updates Step 5: Validation**

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# Validation



A Study of the Impact of Meaningful Use Clinical Quality Measures. Eisenberg et al., 2013.

<http://www.aha.org/content/13/13ehrchallenges-report.pdf>

# Validation

- Utilize available data, knowledge of patient population, and secondary data sources to review performance
- If performance not as expected, immediately engage entire collaborative team to determine the source
  - Data capture issue
  - Mapping issue
  - Measure issue
  - Value set issue
  - Workflow issue

# Testing QRDA: Cypress Validation Utility (CVU) and Pre-Submission Validation Application (PSVA)

- [The Cypress Validation Utility \(CVU\)](#) conformance tool provides implementers with the ability to validate the conformance of QRDA Category I and Category III documents to CMS implementation guides.
- [Pre-Submission Validation Application \(PSVA\)](#) is an application program interface (API) which provides vendors, hospitals, and providers with a method for validating eCQM files within their own system/environment prior to submission and for securely transporting valid files to the CMS. The PSVA tool has three interfaces as part of the download package and a user is able to select the option that best meets their needs.

# CYPRESS Validation Utility

Cypress Validation Utility allows for the testing of QRDA Category I and Category III documents for conformance to CMS reporting submission requirements.

The screenshot shows a web browser window with the URL <https://cypressvalidator.healthit.gov>. The page title is "cypress validation utility". A prominent warning message states: "WARNING: This utility is meant for synthetic patient records only. DO NOT upload documents containing Protected Health Information (PHI) or Personally Identifiable Information (PII). The Cypress QRDA Validation Utility is intended as a development tool for EHR vendors who are testing synthetic QRDA Category I and Category III documents for conformance to CMS submission requirements. Files submitted for validation must not contain PHI or PII." Below the warning is a "Validate Files" section with an "Upload File" button labeled "Select file". Underneath, there are radio buttons for "Annual Update Bundle" with options for "2017 Bundle for the 2018 Reporting Period" and "2018 Bundle for the 2019 Reporting Period". A "CMS Reporting Program" section includes a "Document Type" dropdown and a "PHI Confirmation" checkbox with the text: "By checking this box, I acknowledge that I've read and understand the warning, and to the best of my knowledge, the submitted files will contain neither PHI or PII." A "Submit" button is located at the bottom of the form.

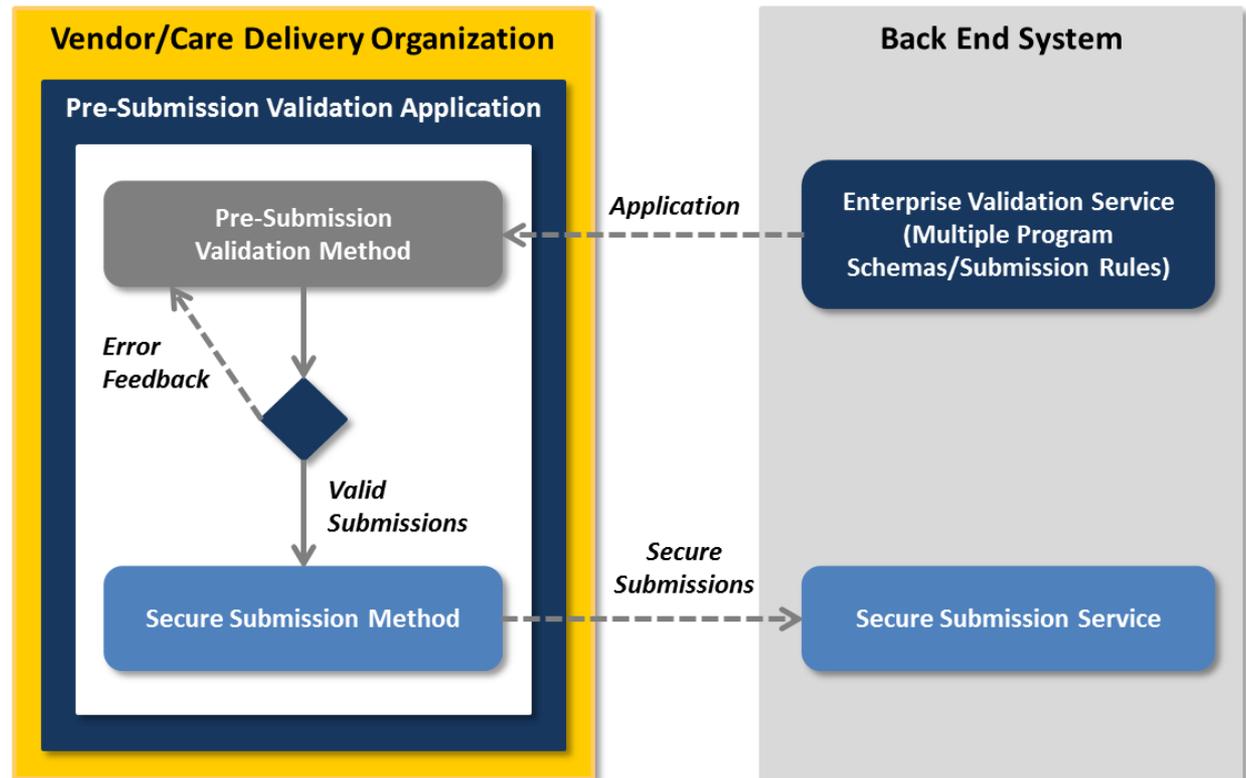
This project is sponsored by the Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health Information Technology (ONC) and has been developed by The MITRE Corporation. For more information, visit the Project Cypress site.

[Privacy Policy](#) | [Disclaimer](#)

# PSVA

The vendor or care delivery organization, also known as the “user”:

1. Downloads the PSVA to the vendor’s system
2. Validates quality submission files locally using the Pre-Submission Validation Method
3. Receives immediate quality submission error feedback
4. Submits valid quality reporting submissions

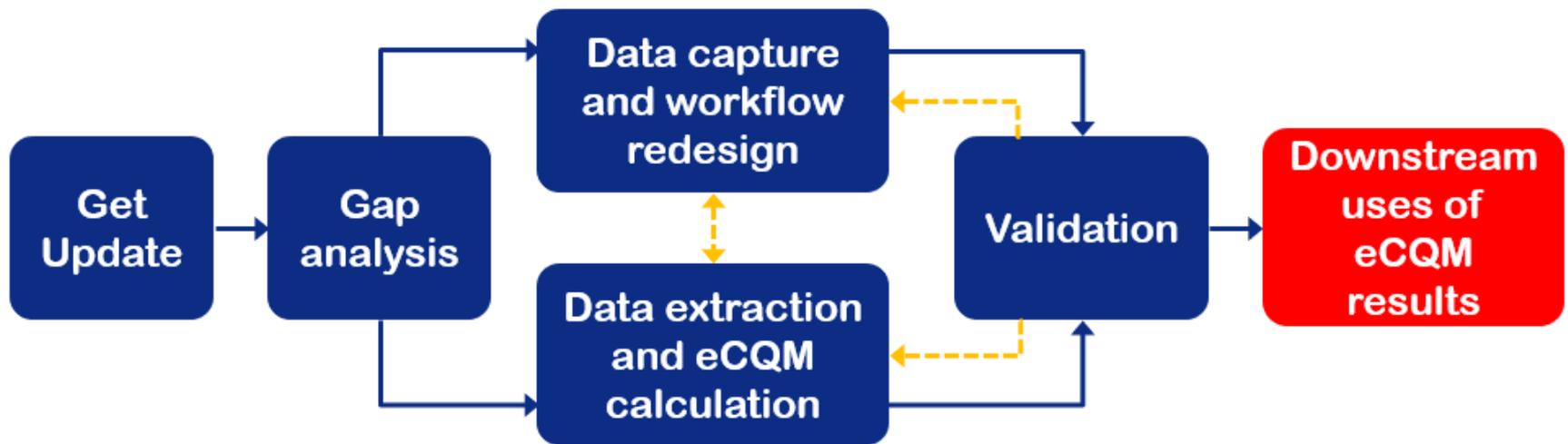


# **Step-by-Step Process for Implementing eCQM Updates**

## **Step 6: Downstream uses of eCQM results**

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# Downstream Uses of eCQM Results



# Downstream Uses of eCQM Results

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- Improve quality of care
- Decrease healthcare disparities
- Inform practice
- Propagate research
- Guide value-based care

**Where do I go for help regarding  
implementing eCQMs and eCQMs updates?**

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# Log and Review eCQM Implementation Issues ONC Project Tracking System (JIRA)

Powered by The Office of the National Coordinator for Health Information Technology (ONC)

[CREATE AN ACCOUNT](#) [LOGIN](#)

[LEARNING RESOURCES](#) | [CREATE AN ISSUE TICKET](#) | [SEARCH FOR AN ISSUE](#) | [REQUEST A NEW PROJECT](#)

The ONC Project Tracking System is a collaboration platform in which users can **log**, **track**, and **discuss** issues with subject matter experts in support of health information technology implementation. It also provides tools to facilitate knowledge sharing and agile project management.

**Reminder:**  
This is an open platform that does not intend for users to communicate sensitive or confidential information such as protected health information and personal identifiable information.

Select CQMs

	<a href="#">CQMs</a>	<a href="#">Certification</a>	<a href="#">Other</a>
<a href="#">BONNIE Issue Tracker</a>	<a href="#">BONNIE</a>		
<a href="#">CMS Hybrid Measures</a>	<a href="#">CHM</a>		
<a href="#">Comments on eCQMs under development</a>	<a href="#">PCQM</a>		

**Hospital Inpatient Quality Reporting (IQR)**  
Contact the IQR Information Website:  
<https://cms-ip.custhelp.com>  
(844) 472-4477

**Quality Payment Program (QPP)**  
Contact the QPP Information Center:  
[QPP@cms.hhs.gov](mailto:QPP@cms.hhs.gov)  
(866) 288-8292

**Medicare and Medicaid Promoting Interoperability Programs**  
Contact the Quality Net Help desk  
[qualitynet@hhs.gov](mailto:qualitynet@hhs.gov)

# ONC eCQM Issue Tracker (JIRA)

Dashboards ▾ Projects ▾ Issues ▾ Search

**Reminder: Do not include any PHI or PII in JIRA. If you require 508 accessibility assistance, please send an email to [onc-jira-questions@healthit.gov](mailto:onc-jira-questions@healthit.gov)**

Every Saturday the ONC Issue Tracking System, including Confluence, will be unavailable for weekly maintenance between 10pm EST and the following morning at 3am EST. Please contact [onc-jira-questions@healthit.gov](mailto:onc-jira-questions@healthit.gov) with any questions.

## eCQM Issue Tracker

- Summary
- Issues
- Reports
- Components

### Activity Switch view ▾

The Electronic Clinical Quality Measure (eCQM) Issue Tracker is used to track issues related to electronic clinical quality measures (eCQMs) used in CMS quality reporting programs including questions on implementation (e.g., the specifications, logic, code sets, measure intent) or policy (e.g., reporting requirements).

**Reminder: Do not include any Protected Health Information(PHI) in JIRA.**

The Change Review Process (CRP) is a decision-making model to determine the impact of an update, as defined by regulation with the intent to minimize provider and vendor burned in the collection, capture, calculation, and reporting of an electronic clinical quality measures (eCQMs). As part of this process we hope to solicit feedback from JIRA users by opening up issues for public comment and voting. To learn more about CRP, please review the information and documents on [CQM-2070](#). To subscribe to the Weekly CRP digest, please email: [CRP@mathematica-mpr.com](mailto:CRP@mathematica-mpr.com)

The public comment period for the following CQM will be open from Nov 30- Dec 14.

- [CQM-3376](#)
- [CQM-3377](#)
- [CQM-3378](#)
- [CQM-3379](#)

The public comment period for the following CQM will be open from Nov 29 - Dec 13.

- [CQM-3199](#)
- [CQM-3360](#)
- [CQM-3361](#)
- [CQM-3362](#)
- [CQM-3363](#)
- [CQM-3364](#)

Project Lead  
[Cindy Cullen](#)

Last week most active ⓘ  
● ● ●

Key  
CQM

Category  
Quality-Measures

<https://oncprojectracking.healthit.gov/support/projects/CQM>

# Using ONC eCQM Tracker (JIRA)

- [Create an Account \(Optional\)](#). You will need an account to create a new issue or to track (watch) an existing issue, but you don't need one to search for a public issue.
- [Search for an Issue](#). Have a question? Search by keyword or project, see if others have submitted the same question, and review the responses.
- [Track an Issue](#). Find an issue that you're interested in? Keep track of changes or comments on a ticket by clicking '*Start watching this issue*' on the right-hand side of the issue. You will need to be logged into your JIRA account.
- [Create an Issue](#). Can't find your issue? Make sure you're logged in – create an issue by clicking the orange “Create Issue” button at the top of the screen. [Be sure to select the correct project](#) and issue type from the dropdown menu in the form. Reminder: Do not include any Protected Health Information (PHI).
- [Review your Issue](#). Once you create an issue, you will be listed as a reporter of that issue. You can make comments, edits, change, add attachments, and communicate with assigned subject matter experts via the comments feature. Additionally, you will receive an email notification of any status changes to your issue.

# Where do I go for help regarding use of eCQMs in CMS Quality programs?

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# CMS Policy/Quality Reporting Program Questions

- Hospital Inpatient Quality Reporting (IQR) Program - Hospital Inpatient Value, Incentives, and Quality Reporting Outreach and Education Support <https://cms-ip.custhelp.com> or (844) 472-4477
- Medicare and Medicaid Promoting Interoperability Programs - Quality Net Help Desk [qnetsupport@hcqis.org](mailto:qnetsupport@hcqis.org) or (866) 288-8912
- Quality Payment Program (QPP) - [QPP@cms.hhs.gov](mailto:QPP@cms.hhs.gov) or (866) 288-8292
- Quality Net reporting, data upload, Pre-Submission Validation Application (PSVA), etc. - Quality Net Help Desk [qnetsupport@hcqis.org](mailto:qnetsupport@hcqis.org) or (866) 288-8912

# How do I get involved?

- [Engage in eCQI](#)
  - This overview provides a listing of ways to engage with the community including open meetings, public comment periods, workgroups, technical expert panels, and educational events

# Appendix: Other Information

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# Acronyms

Term	Definition
API	Application Program Interface
BPS	Binding Parameter Specification
CAH	Critical Access Hospital
CVU	Cypress Validation Utility
DERep	Data Element Repository
DRC	Direct Reference Code
eCQI	Electronic Clinical Quality Improvement
eCQM	Electronic Clinical Quality Measure
EH	Eligible Hospital
EHR	Electronic Health Record
EP	Eligible Professional
HL7	Health Level Seven International
HQMF	Health Quality Measure Format
HTML	Hyper Text Markup Language
ICD-10-CM/PCS	International Classification of Diseases, 10 <sup>th</sup> Revision, Clinical Modification/Procedure Coding System

# Acronyms (Cont'd)

Term	Definition
IG	Implementation Guide
IQR	Inpatient Quality Reporting
IT	Information Technology
LOINC	Logical Observation Identifiers Names and Codes
ONC	Office of the National Coordinator for Health Information Technology
PCS	Procedure Coding System
PHI	Protected Health Information
PSVA	Pre-Submission Validation Application
QDM	Quality Data Model
QPP	Quality Payment Program
QRDA	Quality Reporting Document Architecture
TRN	Technical Release Notes
UMLS	Unified Medical Language System
USHIK	United States Health Information Knowledgebase
VSAC	Value Set Authority Center