

## Centers for Medicare & Medicaid Services Center for Clinical Standards and Quality

# Electronic Clinical Quality Measure (eCQM) Strategy Project Outcomes Report

Version 1.0

**August 3, 2020** 

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#### 1. Introduction

The Centers for Medicare & Medicaid (CMS) introduced electronic clinical quality measures (eCQM) into their quality reporting programs during a time of rapid adoption of electronic health records (EHR), spurred by the Health Information Technology for Economic and Clinical Health Act (HITECH Act), which is part of the American Recovery and Reinvestment Act of 2009 (ARRA). The goal was to move away from burdensome, manual abstraction measures by leveraging the growing availability of electronic clinical data to automate the capture, calculation, and reporting of quality measures. Because of short program timelines, rapid development of eCQM specifications, and early use of available standards, the introduction of eCQMs created additional burden for stakeholders implementing and reporting eCQMs.

#### 1.1 Purpose of the eCQM Strategy Project

The eCQM Strategy Project supported the CMS Patients Over Paperwork initiative to evaluate and streamline regulations with a goal to reduce unnecessary burden, to increase efficiencies, and to improve the beneficiary experience. The project provided CMS with an understanding of eCQM implementation and reporting burden and made recommendations for improvement in the use of eCQMs in CMS quality reporting programs. Figure 1 shows the eCQM Strategy Project timeline. The eCQM Strategy Project Recommendations Report summarized stakeholder feedback to inform CMS's prioritization of actions to reduce burden related to eCQM development, implementation, data capture, reporting, and the use of associated tools. This eCQM Strategy Outcomes Report highlights the activities and outcomes of implementing the recommendations.



Figure 1. eCQM Strategy Project Timeline

#### 1.2 Approach to Stakeholder Engagement

The eCQM Strategy Project team gathered feedback from stakeholders on their experiences with eCQMs using a human-centered design approach. The team engaged more than 250 stakeholders through a two-day listening session, three facilitated conference gallery-walk sessions, and seventeen site visits with hospitals and clinician organizations. Stakeholders included clinicians, quality staff, EHR analysts, health IT, quality standards experts, terminologists, and measures developers as shown in Figure 2 and Figure 3. The team collected, analyzed, and summarized the feedback from these events into key eCQM burden themes and associated recommendations for improvement.

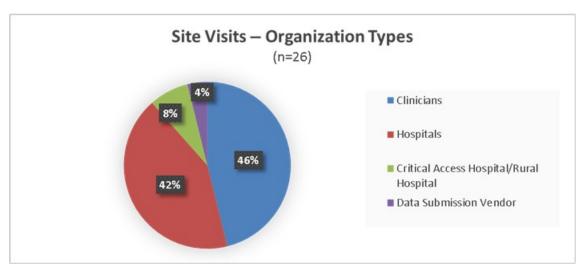


Figure 2. Chart of Site Visit Organization Types



Figure 3. Chart of Site Visit Attendees

#### 1.3 eCQM Strategy Project Scope

The scope of the eCQM Strategy Project included eCQM development, eCQM reporting, and tools for development and reporting. Table 1 includes a brief description for each of these areas. After analysis of the stakeholder feedback, six themes emerged across the key issues. Figure 4 presents the six key issue themes—Alignment, Value, Development Process, Implementation and Reporting Processes, EHR Certification Process, and Communication, Outreach, and Education—and recommendations for each area.

Table 1. eCQM Strategy Project Scope

Scope	Description	
eCQM Development	<ul> <li>Process starting with developing the eCQM concept and ending with measure readiness to submit to the Measures Under Consideration (MUC) list</li> </ul>	
eCQM Reporting	<ul> <li>Processes and requirements for reporting eCQMs to CMS</li> <li>Processes related to eCQM clinical implementation and data capture</li> </ul>	
Tools for Development and Reporting	<ul> <li>Next generation of Bonnie (open source eCQM logic testing tool)</li> <li>Next generation of Cypress (open source EHR certification testing tool)</li> <li>New pre-submission validation tools</li> <li>Other tool(s) innovations</li> </ul>	

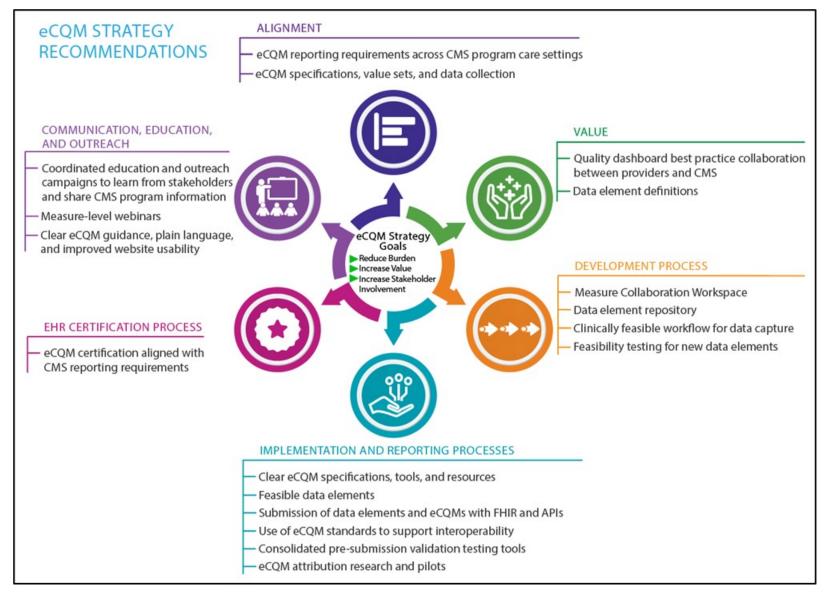


Figure 4. eCQM Strategy Recommendations

## 2. Related CMS and External Program Initiatives

There are many initiatives underway to improve the quality of healthcare, reduce clinician burden, and use technology more effectively and efficiently. Aspects of the eCQM Strategy Project may complement and inform these related initiatives. The project team suggests that the following initiatives, and CMS's collaboration on them, may produce more impactful and sustainable solutions as well as improve alignment with other federal and non-federal entities:

- In June 2020, CMS announced the creation of the Office of Burden Reduction and Health Informatics to unify the Agency's efforts to reduce regulatory and administrative burden and to further the goal of putting patients first.
- The <u>National Health Quality Roadmap</u> published in May 2020 identifies specific actions to drive change through governance and oversight, data collection and reporting, and aligned measures in federal quality programs.
- The CMS Digital Quality Measure (dQM) initiative explores a full transition to dQMs across all CMS quality reporting programs by 2030.
- The <u>National Committee for Quality Assurance (NCQA) Digital Measurement Community (DMC)</u> launched in July 2020 to interact online with other stakeholders to share knowledge, challenges and experiences; learn about the latest strategies and best practices; post unique perspectives; and help to shape the future of digital measurement.

## 3. eCQM Strategy Outcomes

For each of the identified recommendations, the eCQM Strategy Project team worked with CMS staff to identify accountable groups to further explore and implement recommendations. These accountable groups included internal CMS staff, supporting contractors, and groups external to CMS such as federal health agencies and non-government partners in the quality measurement community. From July 2018 to July 2020, the eCQM Strategy Project team collaborated with and communicated findings to these groups to implement recommendations and/or develop plans for action.

There were 117 recommendations in total across the six key issue theme areas, with 114 recommendations that were either implemented or with a plan of action in place. Three recommendations related to eCQM provider attribution continue to be explored. Figure 5 reflects distribution of recommendations by key issue themes. This section highlights the activities to support burden reduction within each of the key issue themes.

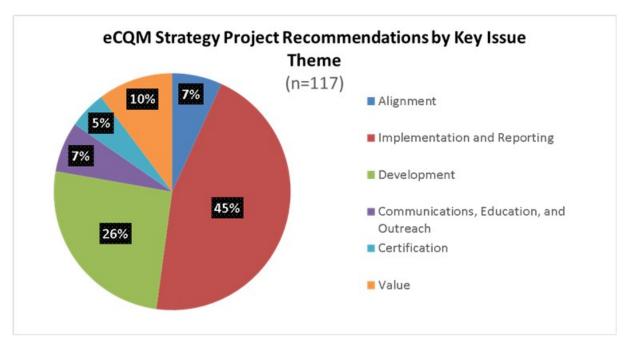


Figure 5. eCQM Strategy Recommendations by Key Issue Theme

### 3.1 Alignment

The *Alignment* recommendations address the lack of alignment of eCQM requirements across CMS programs, other payers, and regulatory agencies. The National Quality Forum defines alignment in quality measurement as "encouraging the use of similar standardized performance measures across and within public and private sector efforts." In sharing their concerns and opinions about alignment challenges, stakeholders spoke of measures, reporting requirements, standards, specifications, supporting materials, and communications. Table 2 highlights the activities and outcomes to support burden reduction related to alignment.

Table 2. Alignment-Related Activities and Outcomes

Action Taken	Stakeholders Involved	Impact and Outcome
Expanded eCQM Governance Group Membership	Federal partners across the Department of Health and Human Services, Department of Defense, and Department of Veterans Affairs	Improved interagency collaboration by sharing quality measurement initiatives and experience across federal health agencies.  Topics include the Da Vinci Project Fast Healthcare Interoperability Resources (FHIR®) initiatives and COVID-19 response efforts to support use of eCQMs with telehealth visits, terminologies, code sets for new testing, data exchange, and reporting.
Established Value Set Workgroup	Measure and clinical decision support (CDS) developers, standards and terminology experts, CMS quality reporting programs, Centers for Disease Control, Agency for Healthcare Research and Quality, and National Library of Medicine	Harmonization of value sets and providing guidelines to improve the usability and clarity of value sets across eCQMs and CDS.
Established QMVIG eCQM Workgroup	CMS quality reporting program representatives	Provided a forum to discuss eCQM related topics and breakdown silos across CMS quality reporting programs.

#### 3.2 Value

The *Value* recommendations address challenges of hospitals and clinicians who feel the burden of eCQM reporting while not seeing the value. Hospitals and clinicians frequently indicated that the eCQMs are not relevant to them because they do not contribute to their quality initiatives, and do not accurately represent the care they provide to their patients. Table 3 highlights the activities contributing to increased value of eCQMs.

Table 3. Value-Related Activities and Outcomes

Action Taken	Stakeholders Involved	Impact and Outcome
Delivered a Clinical Dashboard Best Practices Webinar	CMS, patients, clinicians, health systems, health IT vendors	The webinar provided education to improve awareness of the value of using clinical dashboards to support quality improvement initiatives to over 1200 attendees. The webinar, facilitated sharing best practices of hospital and provider organizations' initiatives that use clinical dashboards to display eCQM performance to improve patient care and outcomes and to close care gaps.
Developed Measure Collaboration (MC) Workspace eCQM Concept Module	CMS, clinicians, health systems, health IT vendors, measure developers	Improves relevance of eCQMs to provider organizations by showing transparency and the capability to submit eCQM Concept ideas for feedback from the Electronic Quality Improvement (eCQI) Resource Center community. Users can submit eCQM concept ideas directly to CMS measure developer staff for review and alignment with CMS quality reporting program priority areas.(Please refer to subsection 3.3, Development Process.)

#### 3.3 Development Process

The *Development* Process recommendations address the burdens related to eCQM development. Providers mainly emphasized the workflow-related problems with eCQMs and that the workflow is highly complex. Providers shared that their greatest burden involves the health IT system documentation that is needed only to satisfy the requirements for the measure specification. Measure developers and health IT vendors recommended an eCQM development collaborative environment to improve transparency for future measure needs and access to better testing data to support the eCQM development life cycle. Table 4 highlights the activities to reduce burden associated with eCQM development. Figure 6 shows the MC Workspace monthly user access.

**Table 4. Development Process-Related Activities and Outcomes** 

Action Taken	Stakeholders Involved	Impact and Outcome
Identified Opportunities to Streamline the Measure Development Life Cycle	CMS, measure developers	Discussed opportunities with measure developers to achieve time savings in the measure development process by using the CMS Measures Inventory Tool (CMIT) Environmental Scan feature during conceptualization; focusing on reliability and validity testing of new data elements during specification and testing; and leveraging the MC Workspace to elicit stakeholder feedback throughout the measure development process.
Launched the MC Workspace: New eCQM Clinical Workflow, and eCQM Test Results modules	CMS, clinicians, health systems, health IT vendors, measure developers	Provides a collaborative portal to promote transparency and better interaction across stakeholder communities that develop, implement, and report eCQMs. The modules provide a platform for measure developers to publish information about their eCQMs under development for stakeholder feedback on clinical workflow and the feasibility of capturing data elements within the eCQMs.
Planned MC Workspace Webinar Series to Increase Awareness of Available Tools to Support Stakeholders	CMS, clinicians, health systems, health IT vendors, measure developers	Educated stakeholders about the MC Workspace modules and companion tools, including the eCQI Resource Center, CMIT, eCQM Flows, and prototypes. The first webinar reached 1365 attendees. The MC Workspace team anticipates the webinar series to increase MC Workspace tool usage.
Supported the CMS Hospital- Measure Development and Maintenance (H-MDM) Implementation Support Workflow Analysis Initiative	CMS Hospital-MDM Implementation Support team, hospitals, health systems, measure developers	The CMS Hospital-MDM team facilitated stakeholder sessions to develop an implementation workflow support tool and help hospitals understand measure intent and data collection requirements.
Contributed Recommendations to CMS Measure Management System (MMS) Blueprint	CMS MMS Blueprint team, measure developers	Recommendations for inclusion in the 2020 CMS MMS Blueprint will increase awareness of new tools and processes to increase stakeholder engagement and streamline the measure development processes across the measure development community.
Identified Opportunities to Streamline the Measure Development Life Cycle	CMS, measure developers	Discussed opportunities with measure developers to achieve time savings in the measure development process by using the CMS Measures Inventory Tool (CMIT) Environmental Scan feature during conceptualization; focusing on reliability and validity testing of new data elements during specification and testing; and leveraging the MC Workspace to elicit stakeholder feedback throughout the measure development process.

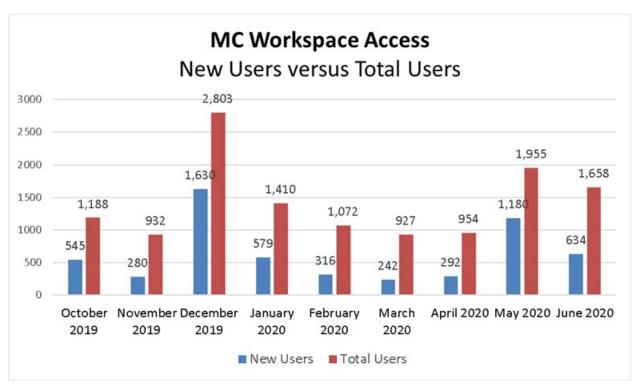


Figure 6. MC Workspace Monthly User Access

#### 3.4 Implementation and Reporting Process

The *Implementation and Reporting Process* recommendations address the burdens involved in eCQM implementation and reporting. Providers noted that when new eCQMs are available for implementation, it is difficult to interpret the measure specification and understand what data elements must be captured in clinician workflow. Hospitals noted that the submission of eCQM data for reporting is unnecessarily difficult and costly, requires the use of multiple submission mechanisms and formats, is often plagued with delays, produces poor feedback to submitters, and presents a general lack of usability and consistency. Table 5 highlights the activities to reduce burden associated with eCQM implementation and reporting. Figure 7 shows the monthly trend in DERep page visits per month.

Table 5. Implementation and Reporting Process-Related Activities and Outcomes

Action Taken	Stakeholders Involved	Impact and Outcome
Developed the MC Workspace eCQM Data Element Repository (DERep)	Clinicians, health systems, health IT vendors, measure developers	Provided platform to improve accurate capture and calculation of eCQMs. The eCQM DERep provides information for data mapping all the data elements associated with eCQMs in CMS quality reporting programs, as well as the definitions for each data element, centralizing information from the eCQM specification, Quality Data Model (QDM), and Value Set Authority Center.
Delivered Series of Measure- Level Webinars	Providers, hospitals, health systems, measure developers	The CMS measure developer teams delivered 10 webinars: five eligible professional (EP)/eligible clinician (EC) eCQMs and five eligible hospital (EH)/critical access hospital (CAH) eCQMs. The webinars shared best practice eCQM implementation strategies to help stakeholders understand data capture, data mapping, and common workflows. Attendance ranged between 675–1400 per webinar.
Improved Customer Experience CMS eCQM Helpdesks	CMS Helpdesks, eCQM Governance Group, eCQM education and outreach (E&O) contractor, measure developers	Improved CMS eCQM helpdesk processes, response times, and identification of issue trends for education and outreach. The goal was to improve customer experience with eCQM helpdesk support in the ONC Project Tracking System (Jira) (standing agenda item to review aging stakeholder issues during the eCQM Governance Group call) and improved relevance of stakeholder E&O and implementation resources (feedback loop from helpdesk staff). Figure 8 shows the number of ONC Project Tracking System eCQM Tracker issues reported and resolved annually, while Figure 9 shows the current average time in days from the time an end user creates an issue to its resolution.

Action Taken	Stakeholders Involved	Impact and Outcome
Launched CMS FHIR for Quality Reporting Initiative for Planning and Testing	CMS, standards and terminology contractors, FHIR experts, CMS quality reporting program receiving systems staff, Health Level Seven International (HL7®) Da Vinci Project Data Exchange for Quality Measurement group	Convened the bi-weekly CMS FHIR quality reporting group to explore a transition to FHIR-based quality reporting for eCQMs. Moved toward simplifying and aligning reporting specifications across CMS programs and with other non-government entities. Collected quality data through FHIR to lessen difficulty with volume, reduce dependency on vendor support for help, and resolve challenges with smaller practices reporting QRDA. Notable activities included:  • Facilitated and participated in HL7 Connectathon Clinical Reasoning Track to test eCQMs and CDS artifacts, tooling, and test cases. Thirty-three organizations participated in testing ten CQL 1.4/FHIR 4.0.1 measures.  • Led the Clinical Reasoning Track at the inaugural CMS Connectathon with 14 participating organizations testing measure specifications, measure data submission, and measure packaging.  • Supported the CMS FHIR Pilot to establish a data connection via Application Programming Interface (API) with two large EHR vendors.  • Developed briefing on HL7 FHIR Bulk Data Import to guide discussion on maturing and testing the processes in the FHIR Implementation Guide (IG) for submitting large amounts of data. Exploring a FHIR measure, highlighting the framework to help implementers understand how measure logic is executed on their data. The project identifies issues with their data, including where there are missing or incomplete data elements
Partnered with the Da Vinci Project Data Exchange for Quality Measurement (DEQM) Team	Da Vinci Project team, CMS quality reporting FHIR team	Enhanced plans for simplified, more efficient eCQM reporting by contributing to the development of the FHIR Measure IG and DEQM IG, FHIR testing and planning.

Action Taken	Stakeholders Involved	Impact and Outcome
Communicated Stakeholder Feedback Requesting Enhanced Features to Improve the Hospital Quality Reporting System	CMS Hospital Quality Reporting team, eCQM submitters (clinicians, hospitals)	The CMS Hospital Quality Reporting team launched the Next Generation System to reduced challenges with testing, submitting quality reports, and submission validation tools. The team streamlined login processes and improved error reports received by users. The team also provided the capability to access multiple hospital accounts with one login to view data. The team is exploring a future feature—to support users who submit for one reporting period and test against another reporting period.
Performed Analysis and Preliminary Testing for eCQM Provider Attribution	CMS quality reporting program staff, measure developers, standards and terminology experts, and ONC	Explored solutions to eCQM attribution by facilitating an Attribution Working Group meeting and QDM. Made capture updates to support attribution and tracking on the ONC Advancing Health Data and Metadata Standards project. The team continues to research stakeholders' challenges associated with provider attribution and quality reporting, including a consistent method to assign patient attribution for eCQMs and a method for calculating eCQMs when reporting levels other than individual clinicians across CMS quality reporting programs. Final impact and outcome will be recognized and reported once feasibility and burden concerns from health IT vendors are resolved.

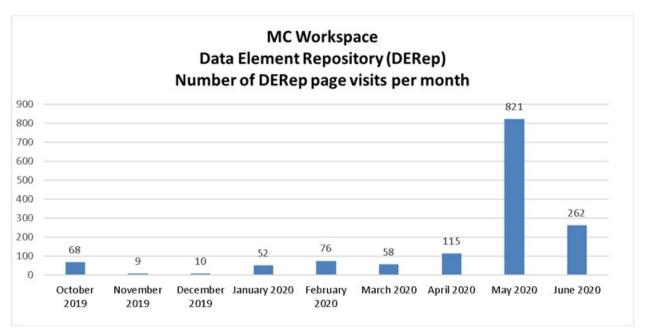


Figure 7. DERep Monthly User Access

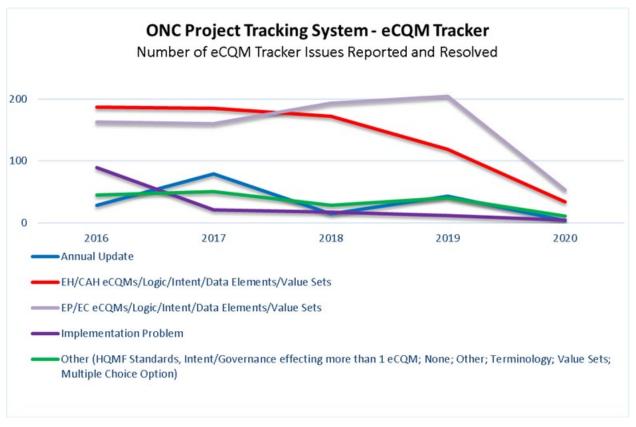


Figure 8. ONC Project Tracking System – eCQM Tracker Issues Reported and Resolved

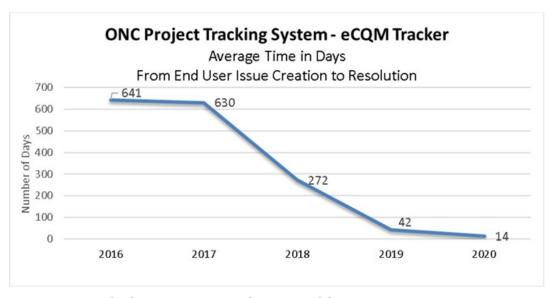


Figure 9. ONC Project Tracking System – eCQM Tracker Issue Resolution

#### 3.5 EHR Certification Process

Hospitals and clinicians expected the EHR certification process to ensure accurate and successful eCQM calculation, reporting, and submission to CMS. In actual practice, however, they reported issues with their eCQM data submission to CMS. Table 6 highlights the to reduce burden associated with EHR certification process.

Table 6. EHR Certification Process-Related Activities and Outcomes

Action Taken	Stakeholders Involved	Impact and Outcome
Supported Health IT Certification Criteria to CMS Quality Reporting Data Architecture Implementation Guide	ONC, health IT vendors	Briefed ONC on eCQM Strategy Recommendations, including certification recommendations to align with CMS QRDA IG. ONC published the 21 <sup>st</sup> Century Cures Act: Interoperability, Information Blocking, and the ONC Health IT Certification Program in May 2020. ONC removed the HL7 QRDA standard requirements in the 2015 Edition "Clinical Quality Measures – report" criterion in §170.315(c)(3) and replaced it with requirements for certified health IT to support the CMS QRDA IGs. These decisions reduced burden to hospitals, clinicians, and health IT vendors by removing certification requirements that do not support quality reporting for CMS programs.
Developed the Cypress Validation Utility Plus (CVU+)	Health IT vendors	Reduces the number of stakeholders receiving errors with their eCQM data submission to CMS by allowing health IT vendors to test synthetic QRDA Category I and Category III documents for conformance to CMS submission requirements.

#### 3.6 Communication, Education, and Outreach

A recurring topic across all six issue theme areas was the stakeholders' request for plain language wherever possible to simplify eCQM-related materials and increase consistency of content found on the CMS quality program site. Table 7 presents the highlights of activities to enhance communication, education, and outreach-related outcomes.

Table 7. Communication, Education, and Outreach-Related Activities and Outcomes

Action Taken	Stakeholders Involved	Impact and Outcome
Encouraged Use of Plain Language to Simplify eCQM- Related Materials across CMS eCQM Contractors	eCQM Governance Group members, CMS quality reporting program staff, CMS helpdesk staff, CMS partners, federal health agencies	Improve readability and consistency of eCQM materials produced by CMS contractors, partners, and federal health agencies.  Developed a communication checklist, provided edits to the existing eCQM Naming and Terminology Guide, and developed introductory eCQM materials for distribution. After stabilization from the COVID-19 response, the team plans to pursue CMS clearance and distribute these materials more broadly.

Action Taken	Stakeholders Involved	Impact and Outcome
Alignment of eCQM-Related References across CMS Quality Reporting Program Sites	CMS quality reporting program websites, federal health agency websites that reference eCQMs	Improved accuracy and consistency of eCQM references and eCQM related materials on CMS, federal health agency, and industry websites. Performed an analysis of eCQM-related resources across CMS program websites, federal health agency, and industry websites (i.e., Health Information and Management Systems Society and the NCQA) and communicated findings to respective owners to update and align terminology and available resources.

#### 4. Future Activities

With the support and partnership of CMS quality program staff, contractors, federal health agencies, and non-governmental partners, the eCQM Strategy Project team completed many activities and set several others in motion. To achieve digital transformation in quality reporting, CMS is committed to ongoing initiatives, including:

- Publication of the CMS eCQM Strategy Project Outcomes Report to increase awareness and continue focus on reducing provider quality reporting burden.
- FHIR Quality Reporting development and testing to promote interoperability, simplify quality reporting processes, and align clinical decision support and quality measures standards.
- Stakeholder engagement to develop a strategy to achieve digital transformation across CMS quality reporting programs.
- Participation in the National Health Quality Roadmap initiatives and partnering with federal health agencies to improve patient outcomes through enhanced effectiveness and efficiency of the healthcare quality system.
- Continued research to understand provider attribution challenges associated with eCQM use and reporting and identifying feasible solutions.

### Acronyms

Term Definition

**API** Application Programming Interface

**ARRA** American Recovery and Reinvestment Act of 2009

**CAH** Critical Access Hospital

CDS Clinical Decision Support

**CEO** Chief Executive Officer

CIO Chief Information Officer

**CMIO** Chief Medical Information Officer

**CMIT** CMS Measures Inventory Tool

**CMO** Chief Medical Officer

CMS Centers for Medicare & Medicaid Services

**CNIO** Chief Nursing Information Officer

**CNO** Chief Nursing Officer

**COO** Chief Operating Officer

CQL Clinical Quality Language

**CVU** Cypress Validation Utility

**DEQM** Data Exchange for Quality Measurement

**DERep** Data Element Repository

**DMC** Digital Measurement Community

**dQM** Digital Quality Measure

Term Definition

**E&O** Education and Outreach

**EC** Eligible Clinician

eCQI Electronic Clinical Quality Improvement

**eCQM** Electronic Clinical Quality Measure

**EH** Eligible Hospital

**EHR** Electronic Health Record

**EP** Eligible Professional

**FHIR** Fast Health Interoperability Resources®

HHS Department of Health and Human Services

HITECH Act Health Information Technology for Economic and Clinical Health Act

HL7 Health Level Seven International®

**H-MDM** Hospital-Measure Development and Maintenance

**IG** Implementation Guide

IT Information Technology

MC Workspace Measure Collaboration Workspace

MMS Measures Management System

MUC Measures Under Consideration

NCQA National Committee for Quality Assurance

ONC Office of the National Coordinator for Health Information Technology

**QDM** Quality Data Model

Term Definition

QMVIG Quality Measurement and Value-Based Incentives Group

**QPP** Quality Payment Program

**QRDA** Quality Reporting Document Architecture

**VP** Vice President