How to Accelerate Impact of Quality Measurement through Digital Health

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CMS has set the ambitious and critical goal of transitioning to all digital quality measurement (dQM)

- At the 2020 CMS Quality Conference, Administrator Seema Verma proposed a bold new course for quality measurement
  - Enable a future in which quality is only measured electronically within 10 years
  - Reduce the burden of EHR data transfer by leveraging Fast Healthcare Interoperability Resources (FHIR) application programming interface (API) technology
  - Provide usable, timely data to support delivery of high quality of care
  - Produce reliable and valid measurement results for multiple uses
- Her announcement launched CMS' Meaningful Measures 2.0 initiative
- Stakeholder feedback at the conference supported objectives
A Blueprint for advancing digital quality measures

• The Blueprint will focus on multiple actions
  1. Utilizing appropriate policy levers
  2. Advancing data quality
  3. Advancing technology
  4. Quality data aggregation, analysis and attribution
  5. Alignment across agencies and payers
• Each action demands a multipronged strategy
  • Engaging stakeholders
  • Leveraging policy
  • Evolving technical components

Contractor: Yale/CORE
1. Policy Levers

• Interoperability and patient access requirements (mandated by Cures Act)
• Strategic selection of measures for programs and development of incentives within programs to use digital communication
• Consensus based processes (NQF endorsement, Core Measures Quality Collaborative) to advance utilization of digital measures
• Vendor certification
2. Advancing Data Quality

• Leverage USCDI to scale availability of agreed-upon high-quality data

• Initial focus on Core Clinical Data Elements (CCDE) – lab results, vital signs (these are a subset of the USCDI)
  • CMS has already identified and vetted CCDE as important for quality measurement and used these in voluntary reporting (Hybrid measures)

• Intensive experience and mastery of mapping and QA for CCDE can then be strategically scaled and applied rapidly across USCDI, and ultimately all electronic health information

• Should measures prioritize CCDE common elements?
3. Advancing Technology Through FHIR API

• Transforming data into FHIR (Fast Healthcare Interoperability Resources) standard makes system-wide queries possible

• FHIR tools developed for measurement will support other uses such as clinical decision support and research applications

• FHIR use requires further standards development for use cases in collaboration with HL7

• HL7 FHIR Accelerator projects focus on use cases and align public and private efforts (Examples: DaVinci, Codex, Gravity Project, Argonaut, Carin)
Burden Reduction and Benefits of FHIR

• Reduces Burden:
  • Aligns CMS eCQM reporting with industry clinical data exchange framework, reducing implementation burden
  • Enables automated data retrieval from EHR and submissions of quality data through use of standards-based application programming interfaces (APIs)

• Simplifies Data Mapping:
  • Single mapping to FHIR vs. mapping to both HQMF and QRDA

• Improves Alignment between eCQMs & Clinical Decision Support (CDS):
  • Both use a common FHIR data model (QUICK/FHIR QI Core)

• Promotes Interoperability:
  • Data Exchange Requirements for Quality Measurement are aligned with interoperability standards used in other healthcare exchange
eCQM Strategy Project
eCQM Data Element Repository

• Now includes information for eCQMs used in CMS Quality Programs for the 2021 Performance and Reporting Periods

• Aids in data mapping activities by providing measure information and data element definitions for all the available CMS program eligible hospital/critical access hospital and eligible professional/eligible clinician measures

• Centralizes information from:
  • Value Set Authority Center (VSAC)
  • eCQM specification
  • Quality Data Model
Measure Collaboration Workspace

- Hosted on the eCQI Resource Center ([https://ecqi.healthit.gov/](https://ecqi.healthit.gov/))
- Contains a set of interconnected resources, tools, and processes for eCQMs
- Promotes transparency and better interaction across stakeholder communities interested in developing and implementing more harmonized, accurate, and meaningful eCQMs
The eCQI Resource Center https://ecqi.healthit.gov/fhir

Fast Healthcare Interoperability (FHIR®)

Receive updates on this topic

About
- Tools & Resources

Tools & Resources
- eCQI Tools & Resources
- eCQI and eCQI Educational Resources
- eCQI Implementation Checklist
- eCQI Addendum Checklist
- Measure Collaboration (MCO) Workspace

Fast Healthcare Interoperability Resources (Enable)

FHIR® is an open-source Health Level Seven International (HL7) standard for exchanging patient health information that can represent patient data in different ways (e.g., medications, encounters). FHIR provides a means for representing and sharing information among clinicians and organizations in a standard way regardless of the ways local EHRs represent or store the data. FHIR combines the best features of previous standards into a common specification, while being flexible enough to meet needs of a wide variety of use cases within the healthcare ecosystem. FHIR has a heavy focus on implementation and uses the latest web technologies to aid rapid adoption.

FHIR Quality Measurement

The healthcare community and CMS are exploring a potential transition to FHIR-based quality measurement beginning with research and
FHIR Quality Reporting Roadmap

Reducing burden through streamlined data exchange for eCQM quality reporting.

Standards Development
- FHIR Measure IG
- Data Exchange for Quality Measurement IG
- QI Core/QUICK

Testing and Pilots
- HL7 FHIR Connectathons
- CMS Connectathon
- CMS FHIR Pilot
- Pre-Testing with Health IT Vendors

CMS Receiving System Updates
- CMS Receiving System Development
- FHIR APIs

eCQM Conversion
- QDM/CQL to FHIR/CQL
- FHIR STU3 Conversion
- FHIR R4 Conversion

Tool Configuration
- Measure Authoring Tool FHIR Development
- Bonnie FHIR Development
- Cypress FHIR Development

FHIR Quality Reporting
- Centralized CMS Quality Submission Solution
  Dependent on FHIR testing results

Continuous focus on stakeholder engagement, human-centered design, education and outreach.
CMS/HL7 Joint FHIR Connectathon

CMS hosted the first ever joint CMS/HL7 FHIR Connectathon January 7-8 2020
Clinical Reasoning Track: demonstrate ways to reduce the burden in eCQM reporting through FHIR
Focused on testing of FHIR eCQMs for submission of quality data to CMS
Connectathon Accomplishments:
  o Automated script for updating measure libraries when changes are made to CQL which leads to reduced time for testing
  o Successfully tested both FHIR STU 3 and R4 eCQMs

FHIR Pilot Testing
  o Explore the use of FHIR for electronic quality data exchange
  o Partner with vendors to test and identify future roadmap for FHIR use within CMS quality program (Cerner and Epic volunteered to participate in testing)
  o Assess industry readiness
  o Explore and evaluate technical foundation for receiving and calculating measure data for use across multiple quality programs; stand up FHIR server at CMS
  o Opportunity for CMS to lead the path of EHR data exchange for quality
Enable Patient Centered Data through Data Aggregation

• Many patients receive care at more than one healthcare system

• Although many EMR vendors have data sharing within their system, sometimes the “true” picture of a patient rests among multiple systems, including several EMR’s, public health, payer data

• Data aggregator may use multiple sources to enable a robust patient-centered approach to data
4. Data Aggregation: Current vs. Future State

**Current State**

- Aggregation limited due to
  - Lack of interoperability
  - Limited platforms for aggregation
  - Lack of governance or authority
  - HIPPA restrictions
  - Patient identification

**Future State**

- Aggregate patient-level data to
  - Apply risk adjustment for accountability
  - Integrate data from multiple sources for various uses (SDOH, patient generated)
  - Repurpose siloed data for broad use
    - Measurement & Accountability
    - National surveillance
    - Cross-setting care coordination
    - Multi-site and multi-sector research
    - Systemic continuous QI
Meaningful Measures 2.0 Requires Data Aggregation

**Care Settings**
- Outpatient medical homes
- Acute and Post-acute care
- Ambulatory procedures

**Payers**
- Medicare FFS and Advantage
- Medicaid
- Private payers & self-pay

**MM 2.0 Domains**
- Voice of patient
- Patient safety
- Chronic disease management
- Seamless communication through interoperability
- Affordability and efficiency
- Wellness
- Behavior health and SUDs
5. Stakeholder Alignment

Stakeholders:
- Government agencies
- Technology developers
- Data aggregators
- Measure developers
- Consensus-setting bodies
- Providers
- Payers
- Patients
- Pharma and other potential FHIR users
- HIEs and private companies
- MIDS contractors
- Professional societies
- Registries, QCDRs
- EHR vendors
- Other health IT

QMVIG/DECQ align with strategic plan/HL7 activities

Federal agencies
Private companies
Hospitals
Professional societies
Current Alignment Initiatives across Stakeholders

• Alignment within CMS (across Centers – CCSQ, CM, CMCS, CCIIO, CMMI)

• Alignment across Federal Government

• Alignment through consensus (NQF)

• Alignment with other payers and others – Core Quality Measures Collaborative (AHIP/NQF/CMS)

• Alignment with measure developers – some already piloting their measures as electronic (NCQA)
Summary

• Goal: Quality measurement system that is fully based on digital measures, which reduces burden of reporting, are able to provider many dimensions of data in a timely fashion, enable rapid feedback and transparent reporting, and are leveraged for advanced analytics to define, measure and predict key quality issues.

• This new quality measurement paradigm can only be accomplished through digital measures combined with interoperability