CMS has set the critical goal of transitioning to digital quality measurement

CMS has set a new course for quality measurement aimed at contributing to a learning health system (LHS) to optimize patient safety, outcomes, and experience.

- Enable a future in which **care quality is entirely measured digitally**, using standardized, interoperable data.
- Reduce the burden of electronic health record (EHR) data mapping and reporting workflows by leveraging **Fast Healthcare Interoperability Resources (FHIR®) application programming interface (API) technology** that is already required for interoperability.
- Provide usable, timely data from multiple sources to support delivery of high quality of care and quality improvement.
- Produce reliable and valid measurement results common across multiple programs and payers.
To achieve this vision, CMS needs a coordinated strategy that builds on recent and current activities

- Recent CMS and ONC rules require provider and health plan FHIR® APIs to **make data more accessible for interoperability**
- Meaningful Measures 2.0 identifies **priority areas and focuses on digital quality measures**
- ONC continues to expand the United States Core Data for Interoperability (USCDI) and launched USCDI+ initiatives
- Health Level Seven (HL7®) FHIR Accelerator multi-stakeholder private and public-private groups are advancing FHIR standards for use cases

### ONC Rule
Certified EHR technology (CEHRT) requires FHIR-based APIs supporting exchange of all **USCDI version 1 data elements** according to the US Core Implementation Guide by December 31, 2022

### CMS Rule
Regulated health plans must implement FHIR-based APIs
- For patient access of claims, encounter, and USCDI data by July 2021
- To transfer USCDI data among payers by January 2022

Sources:
Digital quality measures (dQMs) defined

- dQMs are quality measures, organized as self-contained measure specifications and code packages, that use one or more sources of health information that are captured and can be transmitted electronically via interoperable systems.

- Potential data sources for dQMs include EHR data, patient-generated health data, and registry data, among others.

- dQMs will leverage advances in technology (for example, FHIR® APIs) to access and electronically transmit interoperable data for measure calculation and reporting.
CMS developed a **Strategic Roadmap for advancing digital quality measurement** centered around **four key domains**:

- **ADVANCE Technology**
- **OPTIMIZE Data Aggregation**
- **IMPROVE Data Quality**
- **ENABLE Measure Alignment** (Measures, Data, Tools)

The **Strategic Roadmap** focuses on **four domains**.
A **multipronged strategy** across the four domains supports improving quality measurement and patient care.

Each domain demands a **multipronged strategy**

**Advancing Digital Quality Measurement**

- **ADVANCE Technology**
- **ENABLE Measure Alignment** (Measures, Data, Tools)
- **IMPROVE Data Quality**
- **OPTIMIZE Data Aggregation**

**Strategic Roadmap**

- **EVOLVE TECHNICAL COMPONENTS**
- **LEVERAGE POLICY**
- **ENGAGE STAKEHOLDERS**

**Improved Patient Care**
The Strategic Roadmap outlines the current state, future state goals, and provides recommended actions for success.

Advancing Digital Quality Measurement

For each domain, this presentation introduces:

- Description of current state
- Goals of future state
- Recommended actions for success

Strategic Roadmap

- ADVANCE Technology
- ENABLE Measure Alignment (Measures, Data, Tools)
- IMPROVE Data Quality
- OPTIMIZE Data Aggregation

Improved Patient Care
An efficient and streamlined digital measurement ecosystem can contribute to a **learning health system** that uses data to drive health care.
The Strategic Roadmap addresses how an efficient digital measurement ecosystem would improve all phases of the healthcare data lifecycle

<table>
<thead>
<tr>
<th>Healthcare Data Lifecycle</th>
<th>1 Capture</th>
<th>2 Standardize</th>
<th>3 Share</th>
<th>4 Analyze</th>
<th>5 Interpret and Apply</th>
</tr>
</thead>
</table>
| **Digital Measurement Ecosystem Needs the Ability to** | • Capture all data required for dQMs in the EHR, patient portals, or other digital platforms  
• Account for differences in EHR set-ups  
• Align with a comprehensive set of data elements necessary for current or future dQMs | • Employ a standardized data model optimized for interoperability  
• Enable system-wide queries within and across providers by transforming data from multiple EHRs’ different data models into a single, interoperable view | • Make data accessible by exposing it through an API that shares a common core set of capabilities and authentication frameworks across data sources  
• Ensure accessibility and usability without need for special capabilities for each use case | Perform complex calculation and reporting functions:  
• Map quality measurement concepts to the standard data model for interoperability  
• Translate measurement specifications into basic API calls for required data elements  
• Aggregate data elements from multiple sources | • Support multiple uses of the data, not just quality measurement  
• Implement a low-burden measurement approach  
• Facilitate rapid-cycle feedback and learning |

**5 Stages of the Roadmap:**

- **Better Access to Data**
- **Improved Patient Care**
CMS intends to leverage FHIR® for digital quality measurement

- **Reduces burden**
  - Aligns CMS eCQM reporting with industry clinical data exchange framework and clinical decision support (CDS)
  - Data exposed in a consistent format enables automated data retrieval from EHRs and submission of data for quality measurement through use of standards-based APIs
  - Enables the provision of near real-time feedback on quality measurement results to providers

- **Simplifies data mapping**
  - Single mapping to FHIR vs. mapping to Health Quality Measurement Format (HQMF) and Quality Reporting Document Architecture (QRDA)

- **Promotes interoperability**
  - Aligns data exchange requirements for quality measurement and reporting with interoperability standards used in other healthcare exchange methods
  - Flexibility of the model allows for better access to and exchange of information
CMS anticipates FHIR® will be the **dominant standard** used across the industry for many years to come

- FHIR allows the access and use of data elements for a variety of contexts – for example:
  - Patient engagement
  - Population health management programs
  - Facilitation of intelligent clinical decision support

- The commercial community and big tech have embraced FHIR and are building on the same base data model
  - Google has built on it with Google Remote Procedure Call (gRPC)
  - Amazon HealthLake organizes and indexes data in the FHIR standard to help break down data siloes
Advanced Digital Quality Measurement

Strategic Roadmap

- **ADVANCE Technology**
- **ENABLE Measure Alignment**
- **OPTIMIZE Data Aggregation**
- **EVOLVE TECHNICAL COMPONENTS**
- **LEVERAGE POLICY**
- **STAKEHOLDER ENGAGEMENT**

**IMPROVE Data Quality**

**Improved Patient Care**
CMS can leverage structured, standardized data to reduce collection and reporting burden

**CURRENT STATE**

Providers struggle to implement current eCQMs
- Slow adoption and limitations of current standards
- Lack of provider data mapping and quality assurance (QA) of required data
- Requires changes to clinical workflows

**FUTURE STATE**

dQM implementation is seamless and automated
- Focus on **standardized data**—FHIR®, USCDI, and supplemental standards (i.e., USCDI+) that enable automated extraction of EHR data
- Standardized and automated data collection facilitates **valid and reliable data mapping** and streamlined auditing processes
- Elimination of workflow changes required only for measurement and focus on measures that also **align with quality improvement priorities**
CMS is contributing to the **advancement of data standards** through several pathways.
### USCDI version 1 data classes and elements

<table>
<thead>
<tr>
<th>Category</th>
<th>Elements</th>
</tr>
</thead>
</table>
| **Allergies and Intolerances** | • Substance (Medication)  
• Substance (Drug Class)  
• Reaction |
| **Assessment and Plan of Treatment** | • Assessment and Plan of Treatment |
| **Care Team Members** | • Care Team Members |
| **Clinical Notes** | • Consultation Note  
• Discharge Summary Note  
• History & Physical  
• Imaging Narrative  
• Laboratory Report Narrative  
• Pathology Report Narrative  
• Procedure Note  
• Progress Note |
| **Goals** | • Patient Goals |
| **Health Concerns** | • Health Concerns |
| **Immunizations** | • Immunizations |
| **Laboratory** | • Tests  
• Values/Results |
| **Medications** | • Medications |
| **Problems** | • Problems |
| **Procedures** | • Procedures |
| **Patient Demographics** | • First Name  
• Last Name  
• Previous Name  
• Middle Name (incl Middle Initial)  
• Suffix  
• Birth Sex  
• Date of Birth  
• Race  
• Ethnicity  
• Preferred Language  
• Current Address  
• Previous Address  
• Phone Number  
• Phone Number Type  
• Email Address |
| **Smoking Status** | • Smoking Status |
| **Provenance** | • Author Time Stamp  
• Author Organization |
| **Unique Device Identifier(s) for a Patient’s Implantable Device(s)** | • Unique Device Identifier(s) for a Patient’s Implantable Device(s) |
| **Vital Signs** | • Diastolic Blood Pressure  
• Systolic Blood Pressure  
• Body Height  
• Body Weight  
• Heart Rate  
• Respiratory Rate  
• Body Temperature  
• Pulse Oximetry  
• Inhaled Oxygen Concentration  
• BMI Percentile (2 - 20 Years)  
• Weight-for-length Percentile (Birth - 36 Months)  
• Head Occipital-frontal Circumference Percentile (Birth - 36 Months) |

**Data strategy:** Focus on USCDI, USCDI+ and structured, standards-based data for measurement

- Advance the data standardization, transmissibility, and use of currently captured digital data
  - **Reduce hospital burden** by using data already available for other use cases (interoperability, quality improvement) for quality measurement with limited additional workflow requirements as FHIR®-ready models are adopted
    - Leverage FHIR, USCDI, and ONC certification requirements for the basis of EHR-based measurement
    - Contribute to USCDI+ Quality Measurement use case to develop supplemental requirements to support measurement

- Continue to collaborate with federal agencies, standard-setting bodies, and other stakeholders to align data standards for dQMs with other uses
  - Consider how implementation guides for different use cases (for example, public health reporting, clinical decision support, quality measurement) work together to support a learning health system
Data strategy: advance additional data standards for critical data and enhance data validity

- Accelerate digital capture and standardization of new data critical to advance quality measurement
  - **Contribute to the expansion of standards** for data captured beyond the clinical EHR and Medicare claims, including patient-reported outcomes and social determinants of health (SDOH) data
    - These digital data are often captured outside of the EHR, and will require innovation in the use of technology to capture these data and collaboration in standards advancement to represent the data
  - **Advance tools and processes to validate data used in measurement**
    - Mapping data to nationally supported standards is an important initial step, however additional **validation and auditing is necessary** to ensure accountability for accuracy and adherence to standards and requirements
    - Build on existing CMS and other agency audit systems to **deploy advanced tools and methods** for validation of data quality and completeness
      - New technological and analytical advancements such as natural language processing (NLP) and artificial intelligence (AI) can and should be leveraged
Summary: Key actions

**ADVANCING DIGITAL QUALITY MEASUREMENT**

**STRATEGIC ROADMAP**

**DATA QUALITY**

**captures**

**USCDI expansion, released every July, considered for SVAP**

**repeats yearly**

**CMS**

*Define dQM data needs for USCDI consideration and identify data standards priorities for measurement via other pathways (USCDI+)*

**repeats yearly**

**Advance USCDI+ use cases, as an extension to the USCDI**

**maintain and expand FHIR standards and Implementation Guides, and maintain alignment with interoperability standards (USCDI, USCDI+)**

**engages stakeholders throughout Strategic Roadmap development and rollout to advance the digital quality measurement and a learning health system**

**interoperability requirements**

**To meet certification requirements, ONC requires health IT developers (e.g., EHR vendors) to:**
- Make available standardized data (USCDI v1) via FHIR APIs by December 31, 2022
- Make available all electronic health information in any computable format by August 2023

**CMS requires regulated health plans to:**
- Implement FHIR-based API for patient access by July 1, 2021
- Transfer USCDI among payers by January 2022
Advanced Digital Quality Measurement

Strategic Roadmap

ADVANCE Technology

- EVOLVE TECHNICAL COMPONENTS
- LEVERAGE POLICY
- STAKEHOLDER ENGAGEMENT

IMPROVE Data Quality

OPTIMIZE Data Aggregation

ENABLE Measure Alignment

Improved Patient Care
CMS can leverage FHIR® APIs to implement a low-burden measurement approach that facilitates learning.

**CURRENT STATE**

- Data sharing often supports sharing of whole patient record not individual data elements
- Electronic data extraction for eCQMs is burdensome or impossible due to differences in EHR set-ups and requirement to map to the Quality Data Model
- Hospitals' and other providers' work to implement measures has no collateral benefit

**FUTURE STATE**

- Measures are defined in FHIR, a versatile model used across multiple applications that supports access to “atomic” data
- FHIR-based measure applications are components of a service-oriented architecture
- Quality measures are open-core, self-contained tools – Measure Calculation Tools – that query data from FHIR APIs mandated for interoperability
- Work done to implement measures advances quality improvement and research, and measures are developed as modules within the larger healthcare ecosystem
Many providers already have to implement FHIR® APIs that expose standardized data for interoperability.

ONC/CMS Interoperability Requires EHRs to:

- Accommodate user requests for data, search for data, and return required data elements as needed

- Be accessible and usable without requiring special capabilities, using simple queries naïve to the use case

Users could include:
- Other providers
- Patients
- Payers, including CMS
- Researchers

Healthcare Data Lifecycle

1. Capture
2. Standardize
3. Share
4. Analyze
5. Interpret and Apply

Improved Patient Care

Better Access to Data

PROVIDER FIREWALL

Provider FHIR Server

API Endpoints

A

B

C

D

E

F

G

USCDI Content
Stored at FHIR API Endpoints

Transforms and maps to FHIR data model

All USCDI Content
US Core Implementation Guide capability

PROVIDER EHR
Non-FHIR System

API Endpoints

A

B

C

D

E

F

G

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B

C

D

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F

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A

B

C

D

E

F

G

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A

B

C

D

E

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Transforms and maps to FHIR data model

All USCDI Content
US Core Implementation Guide capability
A purpose-built **Measure Calculation Tool** can access EHR data via the FHIR® API for quality measurement.

**Healthcare Data Lifecycle**

1. **Capture**
2. **Standardize**
3. **Share**
4. **Analyze**
5. **Interpret and Apply**

**IMPROVED PATIENT CARE**

**BETTER ACCESS TO DATA**

**MEASURE CALCULATIONS**

**MEASURE CALCULATIONS**

**Provider Firewall**

Map the interoperable data shared by the EHR to specific reporting criteria in measure requests:

- Read and translate measure specifications to reveal measurement criteria
- Map criterion to required FHIR API endpoints resting in provider EHR
- A single report may require mapping measure criteria across **multiple provider EHR FHIR APIs**
The Measure Calculation Tool is a tool for the digital ecosystem that could be **implemented in many ways**

Isolating the burdensome, complex functions required to extract data from provider EHRs and produce reports in response to measure requests in separate Measure Calculation Tools will benefit the entire digital health ecosystem.

**Consider three solutions the tool enables:**

- **TECHNOLOGY SOLUTION A**
  - Provider EHRs Host the Measure Calculation Tools

- **TECHNOLOGY SOLUTION B**
  - Third Party (e.g., HIEO) Runs Separate, EHR-Agnostic Measure Calculation Tools

- **TECHNOLOGY SOLUTION C**
  - CMS Houses Measure Calculation Tools
Provider can build, maintain, and/or host the Measure Calculation Tools in their EHRs

**Provider captures non-standard data at patient encounter:**
- Data model is EHR-specific and usually proprietary to EHR system

**Provider implements FHIR API that transforms data into a standardized data view and likely supports additional capabilities to interact with internal measure tool:**

**Tool accesses data “on-site,” or reads measure request and maps measure criteria to data elements resting at provider API endpoints:**
- May require connecting to multiple EHR FHIR APIs
- Provider installs tool and evolves to commercially hardened version

CMS receives and uses reports for quality measurement and improvement

---

**Healthcare Data Lifecycle**

1. **Capture**
2. **Standardize**
3. **Share**
4. **Analyze**
5. **Interpret and Apply**

**Thousands of Provider EHRs, Each With Their Own Measure Calculation Tools**

**PROVIDER FIREWALL**

**Provider FHIR Server**

**API Endpoints**

**Measure Calculation Tool**

**Transforms and maps to FHIR data model**

**Provider EHR**

**Non-FHIR System**

**BETTER ACCESS TO DATA**

**TECHNOLOGY SOLUTION**
Third party such as HIEO, quality measurement contractor, or aggregator/calculator can run separate, EHR-agnostic Measure Calculation Tools.

Provider captures non-standard data at patient encounter:
- Data model is EHR-specific and usually proprietary to EHR system.

Provider implements FHIR API that transforms data into a standardized data view.

Provider stores passive, interoperable data: Waits for a request from a Measure Calculation Tool or other application/user.

Tool reads measure request and maps measure criteria to data elements resting at provider API endpoints:
- May require connecting to multiple EHR FHIR APIs.

Measure Calculation Tool May Need to Map to Multiple FHIR Servers Per Measure Request.

Provider FIREWALL

Provider FHIR Server

API Endpoints

A
B
C
D
E
F
G

Transforms and maps to FHIR data model

Third Parties Run Measure Calculation Tools for Measures and Measure Sets

Many Data Clients

Provider FHIR Server

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B
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D
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Provider stores passive, interoperable data: Waits for a request from a Measure Calculation Tool or other application/user

CMS houses tool (e.g., QualiFHIR). Tool reads measure request and maps measure criteria to data elements resting at provider API endpoints.

CMS generates and owns reports for quality measurement and improvement only
The aim of the Measure Calculation Tool technical architecture is to **minimize provider burden**

Aligns with other agencies’ initiatives, like the Center for Disease Control’s Making EHR Data More Available for Research and Public Health (MedMorph)

- EHR is data source through FHIR API
- Measure Calculation Tool is backend services application
- Measure repository, or knowledge artifact repository, contains measure specifications
- Trusted third party receives and forwards reports to receiving systems
- Receiving systems (e.g., CMS, private payers, research organizations) obtain reports generated by Measure Calculation Tool
Summary: Key actions

**ADVANCE Technology**

**Title:** ADVANCE DIGITAL QUALITY MEASUREMENT

**Subtitle:** STRATEGIC ROADMAP

---

**Technology**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Beyond</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td><strong>Interpret and Apply</strong>&lt;br&gt;<strong>5</strong></td>
<td>Analyze</td>
<td>Share</td>
<td>Standardize</td>
<td>Capture</td>
</tr>
<tr>
<td><strong>Interpret and Apply</strong>&lt;br&gt;4</td>
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**Strategic Roadmap Foundation**

**Interoperability Requirements**

- To meet certification requirements, ONC requires health IT developers (e.g., EHR vendors) to:
  - Make available standardized data (USCDI v3) via FHIR APIs by December 31, 2022
  - Make available all electronic health information in any computable format by August 2023

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**Stakeholders**

- Centers for Medicare & Medicaid Services
- Office of the National Coordinator for Health Information Technology
- Standard-Setting Bodies
- Third-Party Actors
- Private Payers
- EHR Vendors
- IT Developers
- Measure Developers

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**Other Federal/State Agencies**

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**Technology**

- Map data and stand-up FHIR APIs
- Stand up FHIR server for Measure Calculation Tool (MCT) testing compliant with US-Core capabilities
- Develop prototype MCT
- MCT development and testing

---

**Interpret and Apply**

- Expand dQMs, leveraging MCT infrastructure and validation
- MCT development and testing
- MCTs ready for production

---

**Engage Stakeholders**

- Engage stakeholders throughout Strategic Roadmap development and rollout to advance the digital quality measurement and a learning health system

---

**CMS**

- CMS requires regulated health plans to:
  - Implement FHIR-based API for patient access by July 1, 2021
  - Transfer USCDI among payers by January 2022
Advanced Digital Quality Measurement

Strategic Roadmap

- **ADVANCE Technology**
- **ENABLE Measure Alignment**

- **EVOLVE TECHNICAL COMPONENTS**
- **LEVERAGE POLICY**
- **STAKEHOLDER ENGAGEMENT**

**OPTIMIZE**

**Data Aggregation**

- **IMPROVE Data Quality**

- **Improved Patient Care**
CMS can adapt and leverage current aggregation ecosystem to achieve **accessible and integrated data from multiple sources**

### CURRENT STATE

Data aggregation limited due to
- Lack of interoperability
- Lack of governance or authority
- Health Insurance Portability and Accountability Act restrictions
- Patient identification limitations

### FUTURE STATE

Aggregate patient-level data to
- Apply risk adjustment and attribution for accountability
- Integrate data from multiple sources for various uses (SDOH, patient-generated)
- Repurpose siloed data for broad use
  - Measurement and accountability
  - National surveillance
  - Cross-setting care coordination
  - Multi-site and multi-sector research
  - Systemic continuous quality improvement

---

**OPTIMIZE Data Aggregation**

1. Capture
2. Standardize
3. Share
4. Analyze
5. Interpret and Apply
Data collectors: The original source of data; Aggregate data for their own patients or clients, and across their own affiliated organizations; Often very limited in accessing information captured beyond their own “walls”

Focused data aggregators: Collect and combine data from primary data collectors for a set of narrow or specific purposes, often related to client needs

Broad data aggregators: Combine data from other data aggregators, across many data sources, and for multiple purposes
The role of data aggregators can be optimized to support digital quality measurement

- Data aggregation from multiple digital sources is critical for meaningful measurement; **data aggregators can support many activities:**
  - Provide tools and resources such as quality improvement tools, clinical decision support, and public health reporting
  - Collect, clean, validate, and process data
  - Resolve patient identities and deduplicate data
  - Decrease FHIR® API query load caused by a substantial increase in internet traffic necessary for measurement, and support measure calculation and reporting

- CMS will explore **additional guidance and requirements necessary** for data aggregators to be equipped to aggregate and report the data required for dQMs, to ensure that:
  - All Measure Calculation Tools are correctly supported and function as expected
  - Aggregators demonstrate validity of input files to the Measure Calculation Tools and the measure output

- **CMS will also continue to serve as an aggregator**, as data aggregation from disparate aggregators will be required for national accountability
  - CMS will modernize receiving systems to support streamlined systems that allow for a singular point of data receipt to be used for data aggregation and quality reporting requirements
Summary: Key actions

ADVANCING DIGITAL QUALITY MEASUREMENT

STRATEGIC ROADMAP

DATA AGGREGATION

1. Capture
   - Identify role for aggregators for dQM

2. Standardize
   - Participate in the dQM enterprise
   - Develop guidelines/processes for dQM data aggregation with input from third-party actors/data aggregators

3. Share
   - Engage stakeholders throughout Strategic Roadmap development and rollout to advance the digital quality measurement and a learning health system

4. Analyze

5. Interpret and apply

INTEROPERABILITY REQUIREMENTS

1. Capture

2. Standardize

3. Share

4. Analyze

5. Interpret and apply

DATA AGGREGATION

Year 1
- Capture
- Standardize
- Share
- Analyze
- Interpret and apply

Year 2

Year 3

Year 4

Year 5

Year 6

Beyond

OPTIMIZE

Data Aggregation
Progress on other three domains facilitates alignment

**CURRENT STATE**

- Measures are program-, payer-, and setting-specific
- There have been strides toward interoperability across federal agencies (for example, VA EHR Modernization)
- Providers must support many measures
- Each measure in each setting creates marginal burden for the measured provider
- All-payer measures that capture full provider performance have limited feasibility

**FUTURE STATE**

- A common dQM portfolio across CMS programs, federal/state agencies, and private payers is built and maintained
- Data resources, standards, measures, and tools are shared across agencies and the broader healthcare ecosystem to maximize return on dQMs and minimize marginal costs
- Reporting across payers is low burden
- Health system learning is coordinated and shared across agencies and payers
Key stakeholders

- Both the federal government and the private sector play key roles in accessing standardized health data to improve care
  - For example, private sector develops technologies and measures

- Alignment opportunities
  - Cross-agency
  - Federal/states
  - Federal/private sector
Targets for alignment in building common dQM portfolio: data, tools, measure specifications

- **Identify best opportunities to promote alignment across tools, data, and measurement**
  - Leverage HL7®/FHIR® processes to create tools
  - Build on ONC’s recently proposed Federal Health IT Strategic Plan
  - Engage the payer-driven Core Quality Measures Collaborative

- **Collaborate with agencies and private sector to implement core set of dQMs**
  - Stage implementation

<table>
<thead>
<tr>
<th>Example Targets for Alignment</th>
<th>Federal</th>
<th>Public/Private</th>
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| **FHIR Tools**                | • CMS builds FHIR tools for data extraction, reporting  
                                 • Federal FHIR tools used across agencies  
                                 |         | • HL7 FHIR Accelerator tools used across payers |
| **Streamline Data Transfer**  | • Data shared across CMS uses  
                                 • Data shared across multiple agencies’ uses  
                                 |         | • Data in common format across all payers |
| **Align Measures across Payers** | • Measures aligned across CMS programs  
                                    • Measures aligned with VA/DoD  
                                    |         | • Measures aligned across public/private payers |
Summary: Key actions

**ENABLE Measure Alignment**

**ADVANCING DIGITAL QUALITY MEASUREMENT**

**STRATEGIC ROADMAP**

**MEASURE ALIGNMENT**

1. Capture
2. Standardize
3. Share
4. Analyze
5. Interpret and apply

**INTEROPERABILITY**

Engage stakeholders throughout Strategic Roadmap development and rollout to advance the digital quality measurement and a learning health system.

**STAKEHOLDERS**

- Centers for Medicare & Medicaid Services
- Office of the National Coordinator for Health Information Technology
- Standard-Setting Bodies
- Patients/Caregivers
- Data Aggregators
- Third-Party Actors
- Providers
- IT Developers
- Private Payers
- EHR Vendors
- Measure Developers
- Other Federal/State Agencies

**COMPLIANCE**

To meet certification requirements, ONC requires health IT developers (e.g., EHR vendors) to:
- Make available standardized data (USCDI v1) via FHIR APIs by December 31, 2022
- Make available all electronic health information in any computable format by August 2023

CMS requires regulated health plans to:
- Implement FHIR-based API for patient access by July 1, 2021
- Transfer USCDI among payers by January 2022

**RAPID-CYCLE**

Public and private sector begin to implement common dQM portfolio, building on standardized data and interoperability requirements (staged, as appropriate).
Advanced Digital Quality Measurement

Strategic Roadmap

- EVOLVE TECHNICAL COMPONENTS
- LEVERAGE POLICY
- STAKEHOLDER ENGAGEMENT
- ADVANCE Technology
  - ENABLE Measure Alignment
  - IMPROVE Data Quality
  - OPTIMIZE Data Aggregation

Improved Patient Care
CMS’s active engagement with a broad set of stakeholders is critical to the success of developing, operationalizing, and maintaining the dQM Strategic Roadmap.

**Spectrum of Engagement**

**Stakeholder Engagement**

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<th>Acronym</th>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
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<td>ASPE</td>
<td>Assistant Secretary for Planning and Evaluation</td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>EHRM</td>
<td>Electronic Health Record Modernization</td>
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<td>FDA</td>
<td>United States Food and Drug Administration</td>
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<td>HIMSS</td>
<td>Healthcare Information and Management Systems Society</td>
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<td>HRSA</td>
<td>Health Resources and Services Administration</td>
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<td>NIH</td>
<td>National Institutes of Health</td>
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<tr>
<td>SAMHSA</td>
<td>Substance Abuse and Mental Health Services Administration</td>
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<tr>
<td>SSA</td>
<td>United States Social Security Administration</td>
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Implementation of the actions across the four domains will position CMS to modernize its quality measurement enterprise

- To enable transformation of CMS’s quality measurement enterprise to entirely digital, CMS will build on ONC and CMS interoperability requirements to:
  1. Obtain standardized, interoperable EHR data for quality measurement and expand standards and standards-based APIs for other digital data (for example, patient-generated health data);
  2. Redesign quality measurement tools to be self-contained applications that function in a service-oriented architecture and respect the architecture of provider FHIR API requirements mandated by CMS/ONC;
  3. Modernize processes and requirements to continue to support data aggregation; and
  4. Align data requirements, tools, and measures across reporting programs, government agencies, and the private sector.

- These efforts will support advancing a LHS, and ultimately help improve patient care