National Association of Accountable Care Organizations (NAACOS) Pre-Conference Workshop

Centers for Medicare and Medicaid (CMS) Digital Quality Measurement Transition

September 20, 2023

Today’s Agenda

- CMS’s digital quality measure transition
- Evolution of data standards for digital quality measures (dQMs)
- Future reporting with advanced technology solution
- Updates on data aggregation tools

CMS' Digital Quality Measurement Transition

CMS has set the ambitious and 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

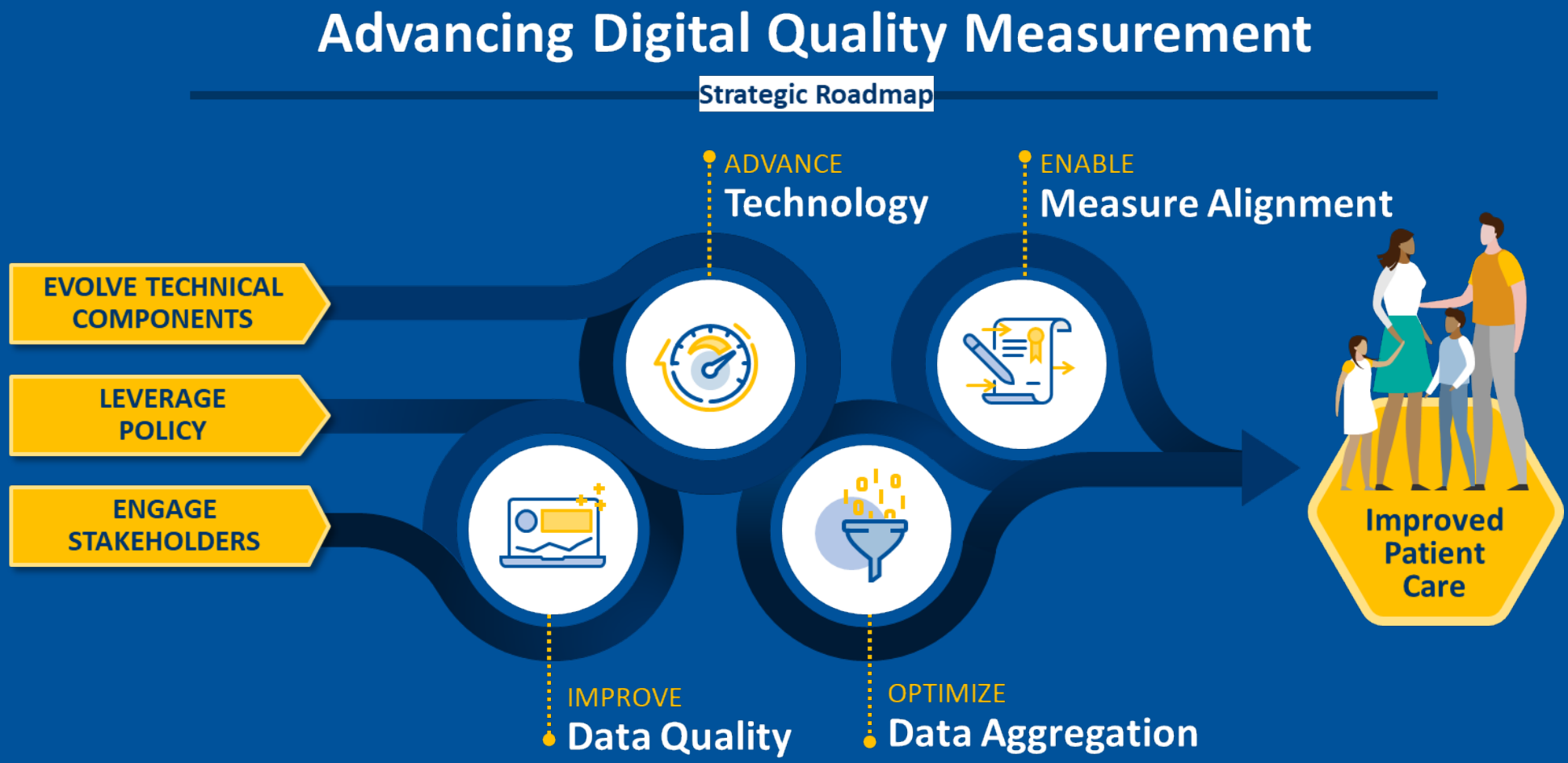
Enable a future in which **care quality is entirely measured digitally**, using standardized, interoperable data

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, detailed data from multiple sources to support delivery of high quality of care, quality improvement, health equity, and patient use

Produce reliable and valid measurement results common across multiple programs and payers

CMS developed a **Strategic Roadmap for advancing digital quality measurement** centered around **four key domains**



The dQM Strategic Roadmap aligns with the goals of CMS's **National Healthcare Quality Strategy**

National Quality Strategy Goals

1. Embed quality across the care journey, must also extend quality across payer types
2. Advance health equity
3. Promote safety to prevent harm and death
4. Foster engagement with stakeholders with focus on person and family-centered care
5. Strengthen resiliency in the healthcare system
6. Embrace the digital age
7. Incentivize scientific innovation and technology
8. Increase alignment to promote seamless and coordinated care

https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/CMS-Quality-Strategy

Evolution of quality measures: the journey from **paper to digital**

Traditional

Paper Quality Measures
Data from claims, manual chart extractions, and patient experience surveys.

CQMs

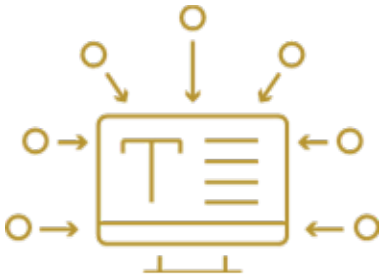
Clinical Quality Measures (CQMs)
Data may come from traditional measure sources (i.e., paper records) and electronic sources (i.e., electronic health records (EHRs), registries).

eCQMs

Electronic Clinical Quality Measures (eCQMs)
Data primarily from EHRs.

dQMs

Digital Quality Measures (dQMs)
Data from EHRs, registries, HIEs, claims, patient experience surveys, etc.



Source: CMS

Digital quality measures (dQMs) defined

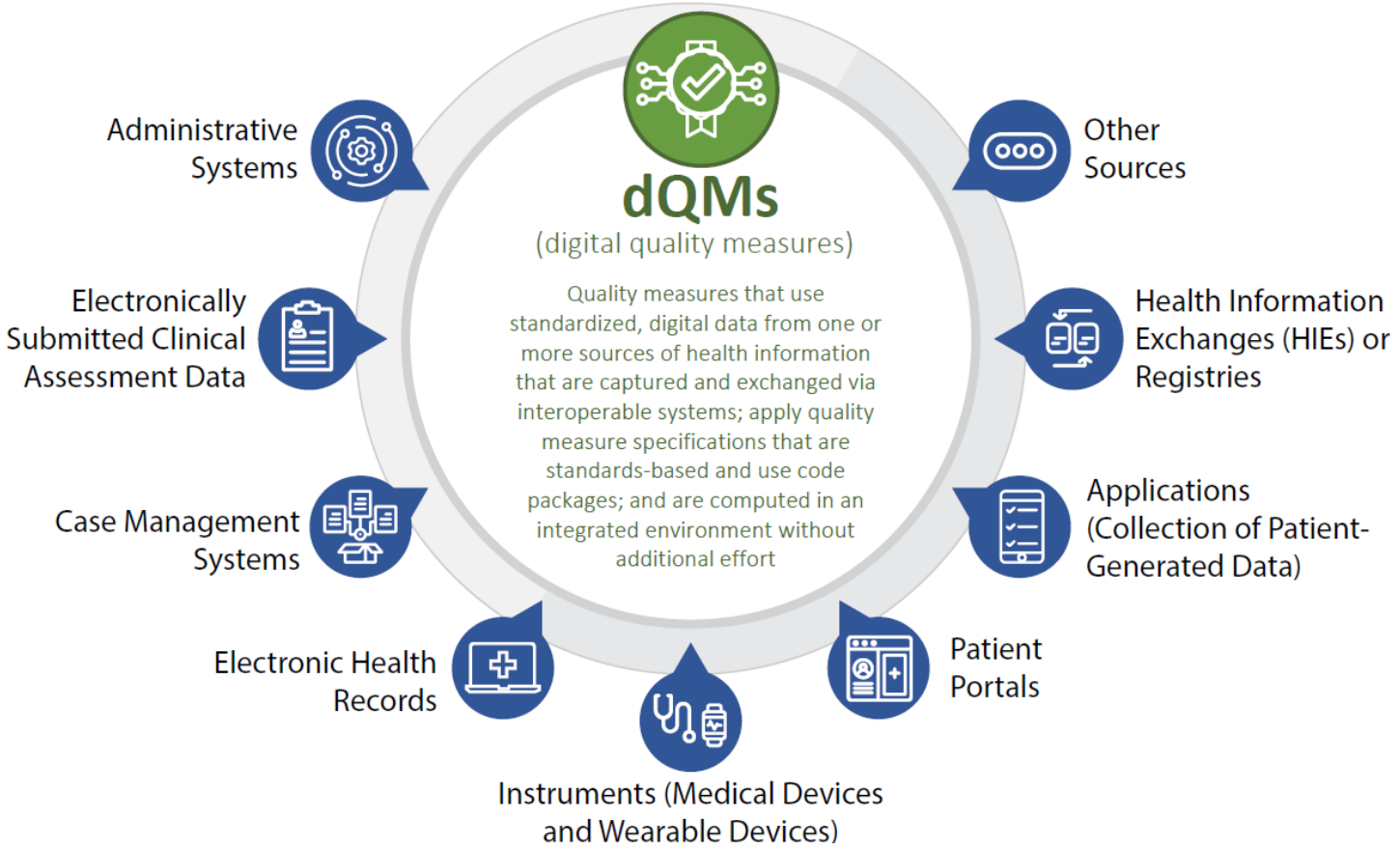
- Use **standardized, digital data** from one or more sources of health information that are captured and **exchanged via interoperable systems**
- Apply quality measure **specifications that are standards-based** and use code packages
- **Are computed** in an integrated environment **without additional effort.** Their solutions enable:
  - Data queries from standards-based application programming interfaces (such as FHIR® APIs)
  - Measure score calculation
  - Generation of outputs necessary for quality reporting
- **Work as part of the LHS** to improve patient care and experiences by ensuring patient and provider access to necessary information in a timely manner (**rapid-cycle feedback**)

Digital quality measures therefore are quality measures that meet these needs for digital quality measurement.

Examples of digital data sources for dQMs

Digital data

- Are seamless outgrowths, generated from routine workflows
- Can be used independently or in combination
- Are not dQM use-case specific (i.e., can be leveraged to inform other use cases such as public health)



Source: CMS

What is Health Level Seven® International (HL7®) FHIR® Standards?

F – Fast (to design & implement)
H – Healthcare
I – Interoperability
R – Resources (building blocks)

Fast, Efficient, & Flexible

- Uses 80/20 Rule: 20% of the requirements satisfy 80% of the needs
- **FREE** to use
- Uses mainstream web technology
- Solutions built from modular components called "Resources"
- Option to develop custom extensions

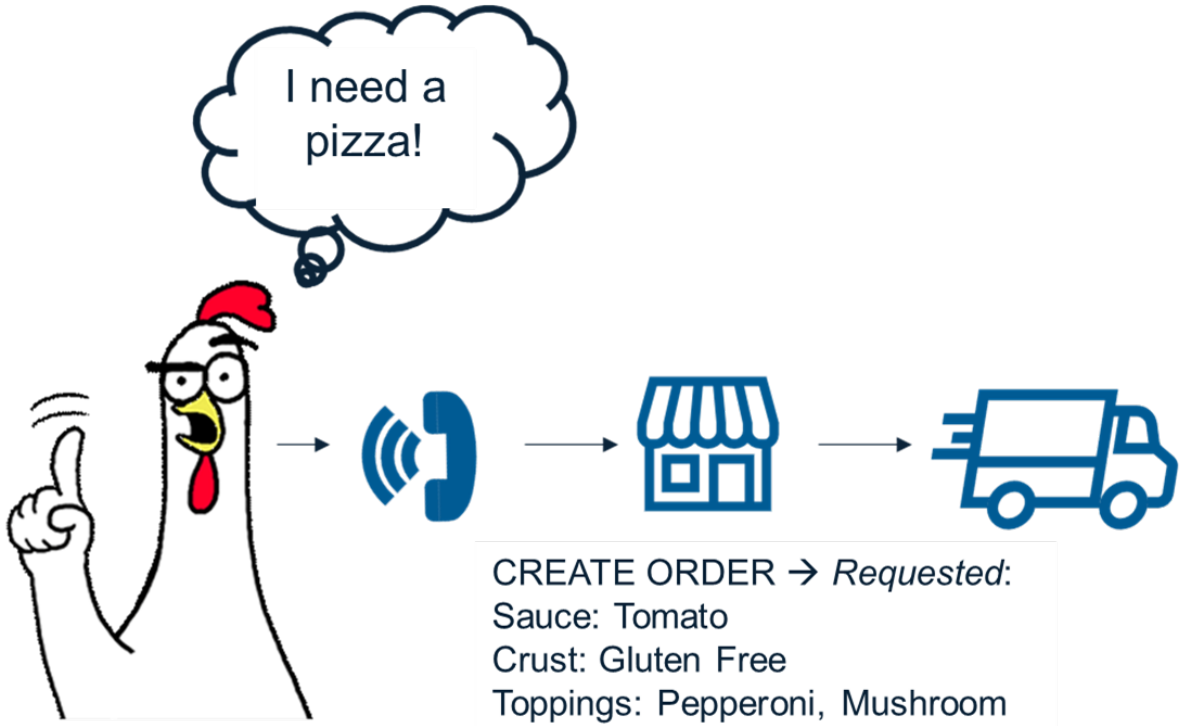
FHIR® is a standard for exchanging healthcare information electronically

- Standards establish a common language and process for all health information technology (IT) systems to communicate, allowing information to be shared seamlessly and efficiently
- FHIR® can be used as a stand-alone data exchange standard or with existing standards

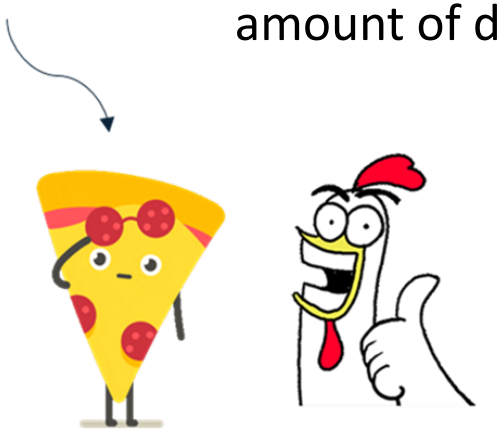
What are the benefits of FHIR®?

- **Reduces Burden**
  - Align CMS electronic clinical quality measure (eCQM) reporting with industry clinical data exchange framework and Clinical Decision Support (CDS)
  - Use standards-based APIs to receive quality data and submissions, removing manual web submission
  - Enable the provision of near real-time feedback on quality measurement results to providers
- **Simplifies Data Mapping**
  - Provides single mapping to FHIR for Health IT vendors
  - Removes need to map to multiple standards currently in use
- **Promotes Interoperability**
  - Aligned with interoperability standards used in other healthcare exchange scenarios
  - Flexibility of the standard allows access to and exchange of information; suitable for use in a variety of contexts
  - FHIR® is also being embraced by the commercial community and big tech

What is an API?

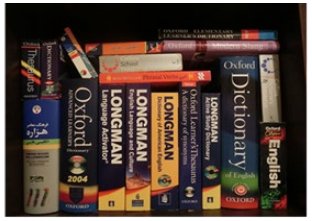


- **Application Programming Interface**
  - Software that allows two systems to talk to each other
  - Request and Response
  - Enables the retrieval or exchange of only specified information from a large amount of data



What is a FHIR® API?

- Leverages same standards as web browsers to reduce bandwidth requirements
- Uses HL7® FHIR® standard with Representational State Transfer (REST): software used for Web services development
- Reduces miscommunication and impediments to communication between systems by establishing *common language (XML/JSON)* and protocol (HTTP) for how systems exchange data (i.e., directions)
- Improves searchability using standard terminology
- ***Implementation guides serve as instructions for how to build FHIR® APIs***



English ≠ Russian

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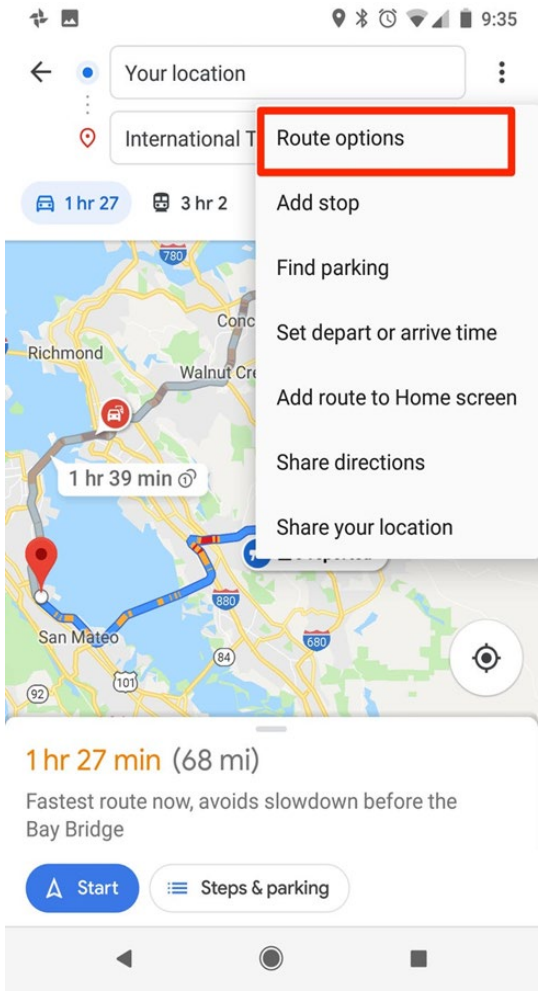


Advanced Digital Quality Measurement

Strategic Roadmap

Data standardization is the foundation to successful digital quality measurement

IMPROVE
Data Quality

- **CMS is contributing to the establishment of a functional learning health system, with standardized data as the foundation**
  - Learning health systems generate knowledge from data captured during routine care
- **Data standardization**
  - Transforms data into a common format
  - Ensures data quality
  - Allows for data flow
  - Supports program alignment
- **Standardized data could be used for multiple use cases, such as**
  - Patient health data access
  - Quality measurement
  - Big data analytics
  - Research

CMS can leverage structured, standardized data to reduce collection and reporting burden

IMPROVE **Data Quality**

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

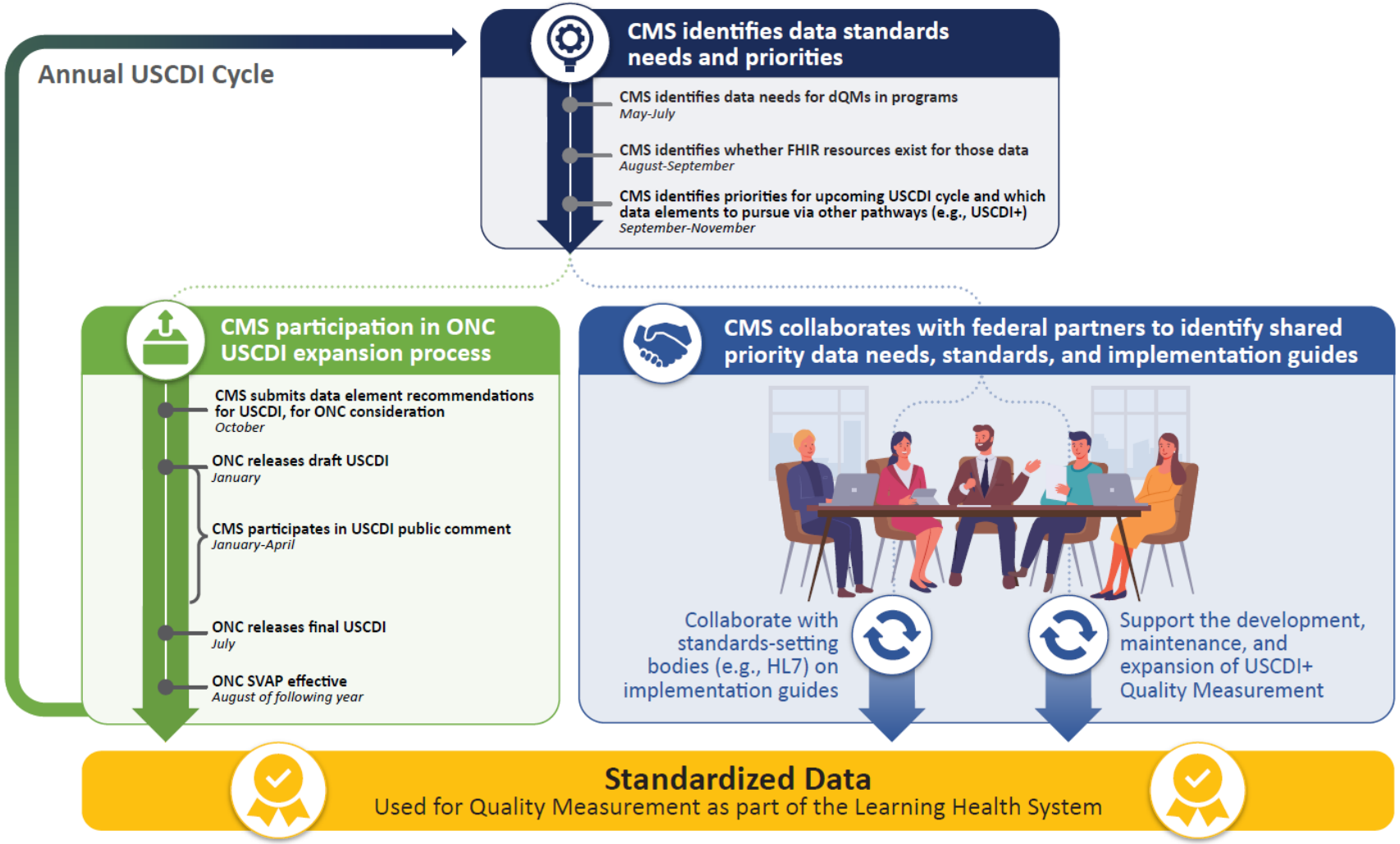
FUTURE STATE

dQM implementation is seamless and automated

- Focus on **standardized data**– FHIR®, USCDI, and supplemental standards (i.e., USCDI+ Quality) 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

IMPROVE
Data Quality



Source: CMS

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

IMPROVE
Data Quality

- Advance the data standardization, transmissibility, and use of currently captured digital data
  - **Reduce provider 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 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

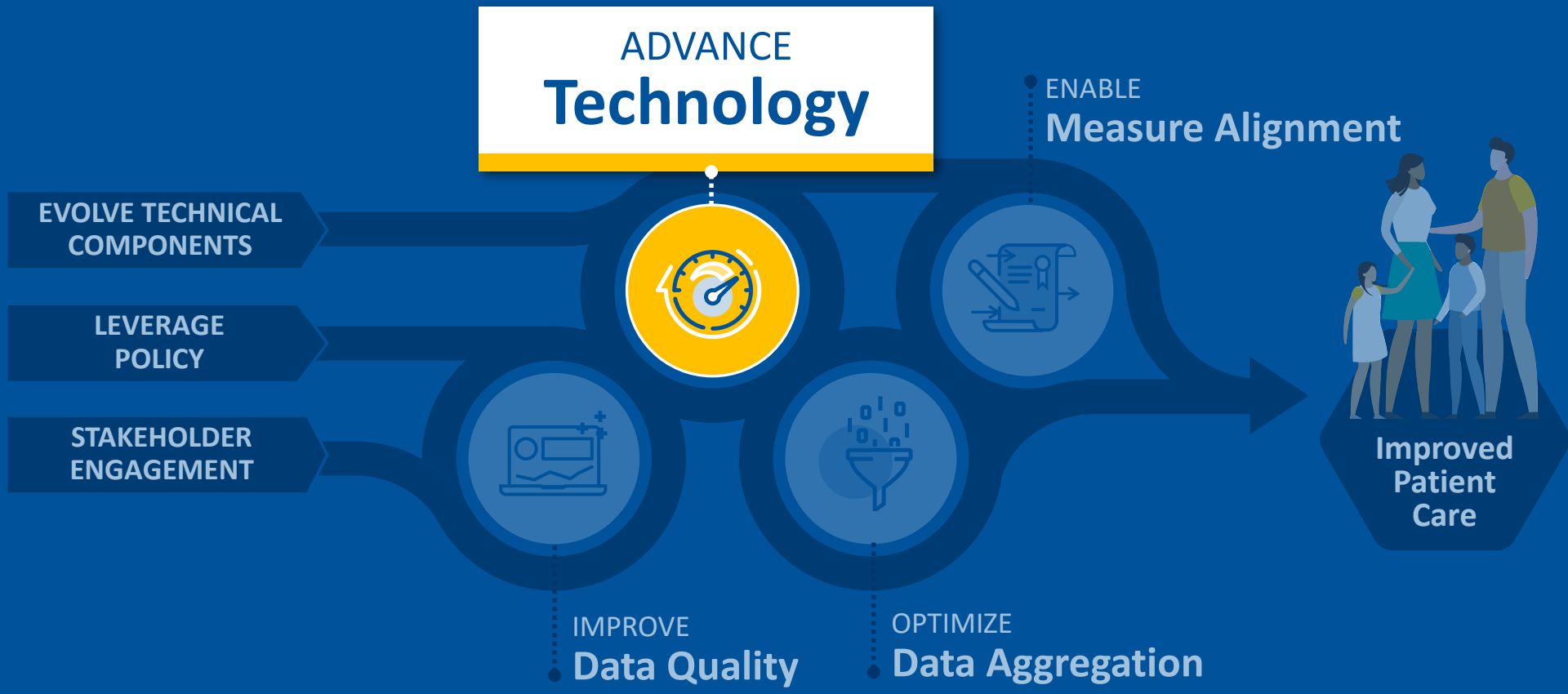
IMPROVE
Data Quality

- 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 outcome, social determinants of health (SDOH), and patient safety 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

Advanced Digital Quality Measurement

Strategic Roadmap



CMS can **leverage FHIR® APIs** to implement a low-burden measurement approach that facilitates learning

ADVANCE
Technology

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

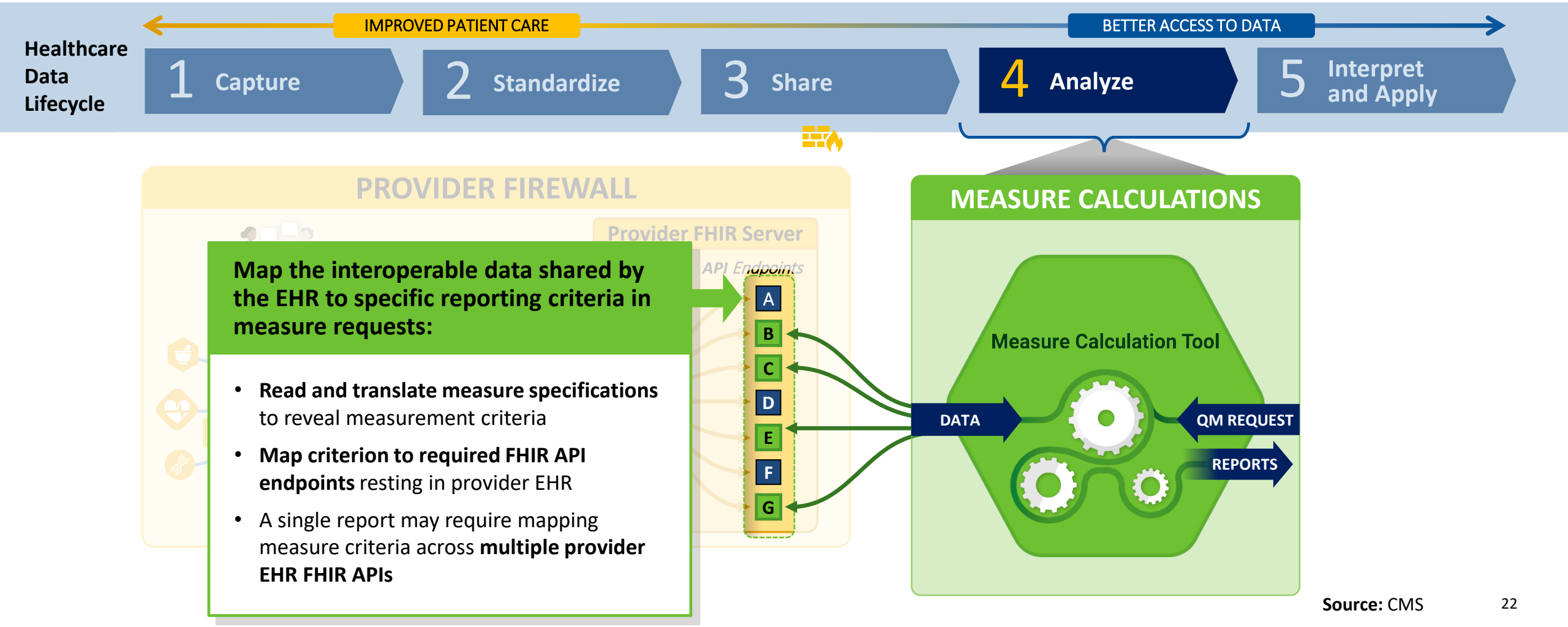
FUTURE STATE

- 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

CMS is exploring end-to-end solutions that leverage technology such as FHIR-based APIs for dQM reporting

ADVANCE
Technology

A purpose-built Measure Calculation Tool (MCT) can access EHR data via the FHIR® API for quality measurement



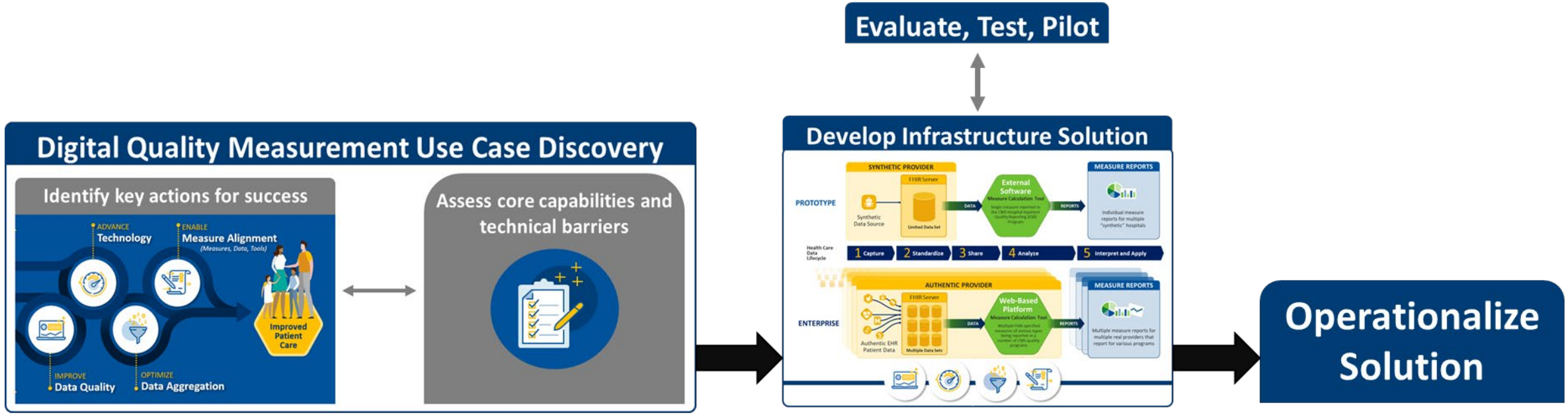
Source: CMS

How could CMS end-to-end solutions minimize reporting burden?

- Through using the same national standards, e.g.
  - FHIR®
  - USCDI & USCDI+ Quality
- Leveraging an architecture that supports flexible and automated data exchange
- Aligning architectures with other federal initiatives to streamline data exchange

Path to solution execution

ADVANCE
Technology



Source: CMS

Path to solution execution: Current work

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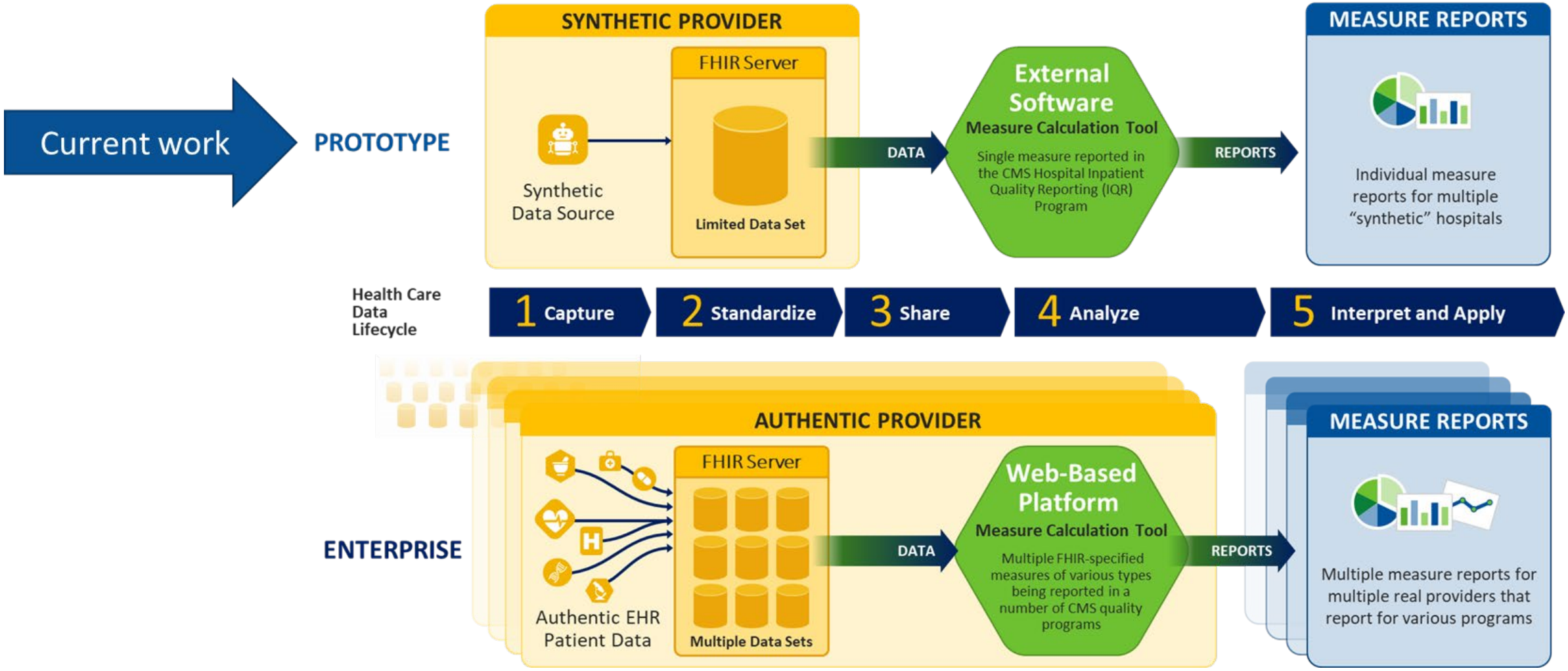
Technology



Source: CMS

MCT Prototype Demos and Current Resources

- CMS demoed initial prototype of MCT at July CMS Connectathon and September Connectathon
- CMS publicly released the source code and initial implementation guide and looks forward to stakeholder feedback
  - **MCT v1 Prototype Source Code**: https://github.com/DSACMS/mct
  - **MCT v1 Prototype Implementation Guide**: https://build.fhir.org/ig/cqframework/mct-ig/
  - **Measure Specifications – Eligible Hospital and Eligible Clinicians**: https://github.com/cqframework/ecqm-content-qicore-2023/tree/master/bundles/mat

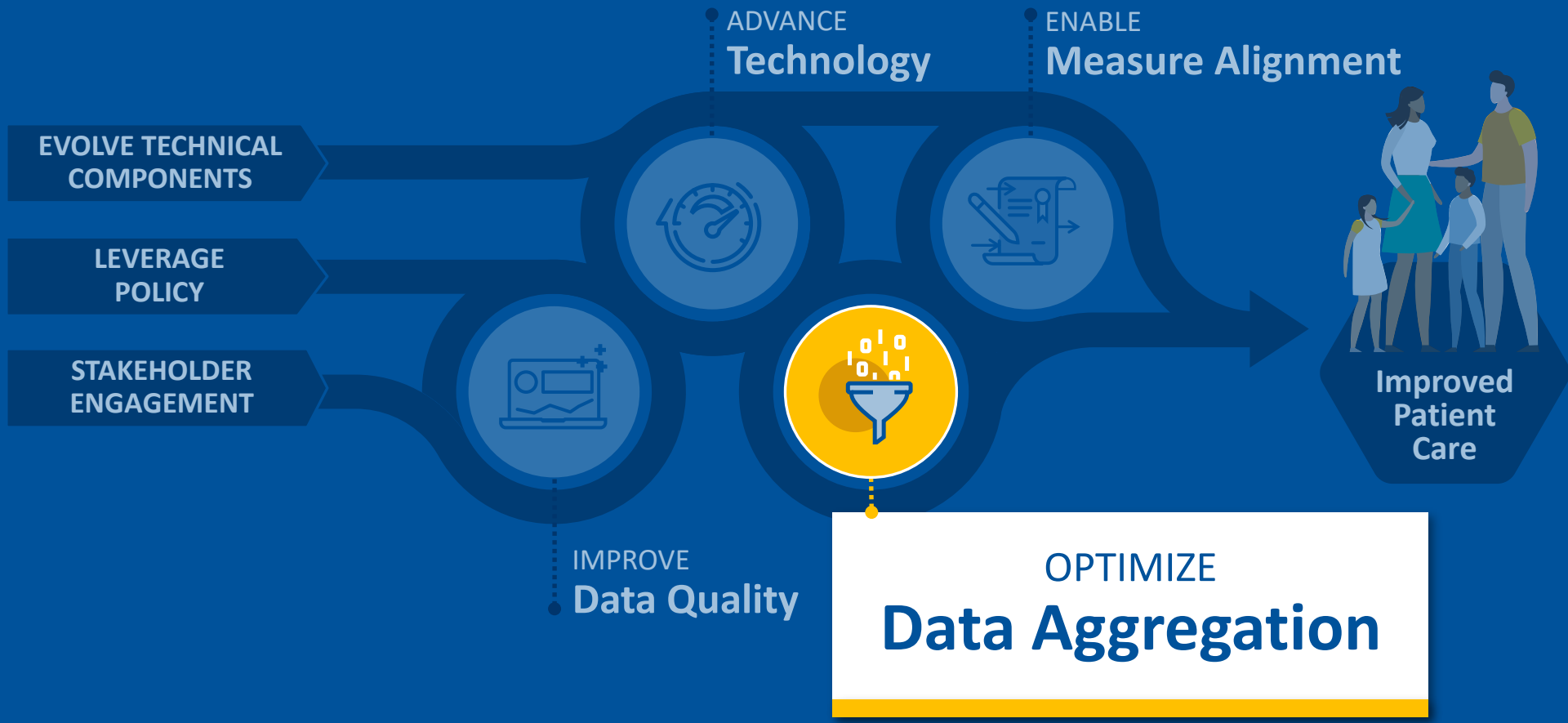
Multiple venues to provide CMS feedback on MCT prototype

- Participate in the chat on Zulip (developers/FHIR community): https://chat.fhir.org/#narrow/stream/401023-mct
- Provide feedback via Github (developers/FHIR community)
- Respond to MCT Prototype Survey* (all stakeholders including providers, implementers, developers, and vendors): https://yalesurvey.ca1.qualtrics.com/jfe/form/SV_6VVUoslR5si043s

* MCT Prototype Survey developed by Yale-CORE

Advanced Digital Quality Measurement

Strategic Roadmap



Data Aggregation

- ACO Listening and Learning Sessions
  - CMS wrapped up listening sessions with select ACO leadership and technical teams to learn about their operational and technical successes and challenges specifically as it relates to meeting the Medicare Shared Savings Program (MSSP) requirements for eCQMs and Merit-based Incentive Payment System (MIPS)/CQMs
- What we learned
  - ACO Challenges
    - Patient matching and data deduplication across multiple systems and providers
    - Electronic Health Record Vendors [costs are prohibitive; challenges vetting vendors; inability to generate standard Quality Reporting Document Architecture (QRDA) reports; variation in QRDA report structure]
    - Technical support capabilities [data mapping and data validation]
    - Data completeness and specialist reporting requirements

Data Aggregation

- Next steps
  - ACO Journey to eCQM and MIPS/CQM Reporting
  - Updates on the development of the CMS DeDupliFHIR
    - Currently in development phase
    - No expected timeline to demo a prototype

Onwards to full dQM: The first step in CMS' transition to digital quality measurement is to use FHIR®-based eCQMs

1. Authoring eCQMs in FHIR®, as an initial step in the digital quality measurement transformation
   - CMS is converting its current Quality Data Model (QDM)-eCQMs to FHIR®-based eCQMs
   - FHIR eCQM reporting will leverage standardized data and the development of a FHIR model for eCQMs
   - FHIR eCQM reporting can serve as a model for future dQM reporting
2. Collaborating with The Office of the National Coordinator for Health Information Technology (ONC) to support advancing data for digital quality measurement and other use cases through data standardization
   - Engaging in the USCDI process, developed by ONC to identify a standardized set of health data classes and constituent data elements
   - Engaging with ONC on the USCDI+ Quality initiative, to advance standardization of additional data elements for measurement
3. Harmonizing across federal agencies and organizations to ensure CMS data element needs, standards, and data flow vision for quality measurement align with other use cases (e.g., public health, quality improvement, clinical decision support)
4. Developing, and contributing to, systems and tooling to support standards-based digital data exchange

Thank you!

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