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RE: Public Comment on Digital Quality Measures (dQMs): Impact, Implementation, and Evolution of Endorsement Criteria

To whom it may concern,

The Infectious Diseases Society of America (IDSA) appreciates the opportunity to submit comments in response to Battelle's request for input on digital quality measures (dQMs) for the Centers for Medicare & Medicaid Services' (CMS') endorsement. IDSA is a global community of 13,000-plus clinicians, scientists and public health experts working together to solve humanity's smallest and greatest challenges, from tiny microbes to global outbreaks, and recognizes both the transformative potential of FHIR-based dQMs and significant implementation challenges that must be addressed to ensure successful, equitable adoption.

IDSA strongly supports the transition from electronic clinical quality measures (eCQMs) to FHIR-based dQMs, which have the potential to reduce reporting burden, increase measurement precision, and expand real-time insights for providers, organizations and public health systems.

However, the success of this transition depends on:

- Addressing substantial **data standardization gaps**, especially microbiology, antimicrobial therapy, diagnostic context and clinical nuance not captured in the U.S. Core Data for Interoperability (USCDI), the regulatory standard for electronic health record (EHR) vendor compliance
- Preventing **exacerbation of health equity gaps**, particularly for rural and safety-net systems with limited technical infrastructure
- Ensuring continued involvement of **specialty societies** in developing, testing and maintaining clinically rigorous measures
- Establishing **robust testing infrastructure**, governance and version control for dQM logic and FHIR mappings
- Supporting smaller organizations through **technical assistance, national implementation guides and funded pathways** for data mapping and FHIR interoperability

With targeted investment, thoughtful policy design and cross-disciplinary collaboration, dQMs can modernize quality measurement while avoiding unintended harm. IDSA members with experience in quality measurement and informatics bring valuable perspective on the opportunities and challenges inherent in transitioning from eCQMs to FHIR-based dQMs delivery systems.

Question 1: How will dQMs positively or negatively impact the health care community?

Positive impacts

For health care providers and organizations

FHIR-based dQMs have the potential to significantly reduce measurement burden by replacing labor-intensive value set updates and manual data validation processes with standardized, computable, automated data exchange. Real-time or near real-time measurement feedback can accelerate quality improvement cycles, enabling clinical teams to identify and address gaps in care far sooner than quarterly or annual reporting allows.

Alignment with ONC interoperability mandates and growing clinical data exchange frameworks will reduce duplicative IT infrastructure requirements, creating a unified architecture for quality reporting, clinical decision support and regulatory compliance.

For patients

dQMs will enable real-time, granular measurement of previously unmeasurable aspects of care.

For public health

Real-time, harmonized FHIR data can provide earlier visibility into antimicrobial resistance trends, vaccination uptake, outbreak signals and pathogen-specific outcomes. dQMs could complement existing surveillance systems (e.g., NHSN) and strengthen national situational awareness.

Negative impacts

EHR data standardization and quality disparities

A critical gap exists between the clinical data elements required for meaningful quality measurement and those defined within USCDI.[1] Specifically, many infectious disease quality measures depend on detailed clinical and microbiological data, such as specific pathogen identification, antimicrobial susceptibility patterns and timing of diagnostic procedures, that fall outside USCDI requirements and may require additional vendor charges for implementation.

Smaller health care systems, especially those using older or limited-capability EHRs, face substantial technical constraints in mapping local data to FHIR resources. Without mitigation, this will create a two-tiered measurement environment in which larger health systems can fully participate in dQMs while smaller organizations struggle or fail to meet participation expectations.

Variation in clinical documentation practices further undermines the standardization required for structured measurement. Many critical infectious disease concepts – symptoms, infection source attribution, reasoning for antimicrobial selection – exist only in narrative notes. Current FHIR-based dQMs cannot reliably incorporate unstructured data or NLP, risking misclassification or data loss, particularly in conditions requiring nuanced clinical judgement.

Specialty measurement

The transition to highly standardized FHIR measures may unintentionally limit specialty societies' ability to steer the development of nuanced, clinically relevant measures. dQM development through CMS-endorsed, FHIR-based platforms may become dominated by large measure stewards with the resources to maintain complex technical infrastructures, potentially crowding out specialty-specific innovation, particularly in rapidly evolving fields like infectious diseases.

Question 2: What opportunities and challenges are associated with developing and testing dQMs?

Testing challenges

Technical and standardization gaps

The current FHIR ecosystem lacks an equivalent to the mature tooling and consensus infrastructure developed for eCQMs.[2] Variation across measure execution engines and inconsistency in support for CQL create reliability challenges. Critical FHIR resources relevant to infectious diseases remain in varying stages of maturity, and USCDI version 3 does not include many essential microbiology and antimicrobial stewardship data elements (organism identification, infection source, susceptibility patterns, etc.).

Data quality and validation challenges

Clinical teams document treatment decisions, diagnostic reasoning and patient context through unstructured narrative notes while structured data capture (through order entry, result systems, coding) focuses on billing and regulatory compliance rather than measurement needs. Additionally, normal ranges for laboratory values, specimen source codes, severity classifications and outcome documentation vary substantially across organizations and EHR systems. Without national standardization initiatives, these inconsistencies create risks for systematic bias when measures depend on FHIR resources that map differently across different sites, especially between larger and more resource constrained systems.

Question 3: What are the potential benefits, challenges and unintended consequences associated with dQM implementation?

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[1] Office of the National Coordinator for Health Information Technology. (2024). 21st Century Cures Act Final Rule. U.S. Department of Health and Human Services. Establishes requirements for FHIR Release 4 implementation and interoperability standards.

[2] "CMS Consensus-Based Entity (CBE) Endorsement and Maintenance." CMS MMS Hub, 5 Aug. 2025, https://mmshub.cms.gov/measure-lifecycle/measure-implementation/CMS-CBE-EM/overview.

Implementation benefits

Compared to current eCQM reporting workflows, dQMs promise substantial reductions in measurement burden through:

- **Automated data extraction:** Obviates the need for manual extraction or submission, with minimal human intervention beyond technical configuration.
- **Near real-time feedback:** Supports rapid identification of performance gaps and allows concurrent adjustment of clinical workflows.
- **Simplified compliance infrastructure:** Reduces overall costs by eliminating redundancies in health IT infrastructures that currently exist between quality reporting, clinical decision support, and interoperability requirements.

Implementation challenges and consequences

Vendor and infrastructure maturity gaps

Not all EHR vendors have completed FHIR API implementations meeting the completeness and stability requirements for production quality measurement. Organizations depending on vendors without mature FHIR implementations face extended timelines for dQM adoption. Also, many proposed dQM implementations depend on cloud-based measurement engines that introduce complex privacy, security, and data transfer requirements, especially for organizations with restricted connectivity or data residency requirements.

Shift in burden from measure developers to implementers

Current eCQMs shift much of the data standardization burden onto measure developers, who maintain value sets capturing the full range of clinical coding variations for each measure concept. dQMs shift this burden toward EHR implementers and health IT vendors, who must maintain consistent FHIR mappings for standardized data elements. Early implementations of FHIR-based clinical data reporting, such as through CDC NHSN Collaborative (CoLab dQM pilot program), have revealed substantial data mapping inconsistencies across organizations using different EHR platforms and versions. For example, measurement of community-acquired pneumonia relies on specific FHIR resources (Condition, DiagnosticReport, ImagingStudy) that are mapped inconsistently across organizations, leading to substantial variation in how the same clinical scenario is represented in FHIR format.[3] A related challenge is that health systems, hospitals and providers will be dependent on EHR vendors to operationalize new dQMs and update systems in response to specification changes. This reliance can delay provider readiness and introduce operational challenges outside providers' control. Vendors may also shift development or upgrade costs to providers, adding financial strain.

Gaming risks

The visibility and accessibility of near real-time dQM results create substantial risks of organizational behaviors that include documentation or coding to improve measured performance without enhancing clinical care. For example, measures that incentivize aggressive de-escalation may result in tactics supporting narrow-spectrum therapies without clinical appropriateness, or conversely premature discontinuation to meet optimization metrics. Conversely, since dQMs would be pulling from various sources of data instead of relying on one source of data (such as administrative claims), it could potentially be more difficult to "game" the system.

Digital division and health equity risks

Perhaps most concerning is the risk that dQM implementation will accelerate existing health care disparities. Large, well-resourced health systems with mature FHIR implementations and dedicated IT infrastructure will implement dQMs rapidly and comprehensively, gaining visibility into performance trends and opportunities for improvement. Systems with substantial IT resource constraints (rural, safety-net) will face prolonged barriers to dQM participation, potentially creating a widening measurement gap where historically disadvantaged populations become even less visible to national quality monitoring systems. Additionally, automated cloud-based engines might change over time, introducing risks that measurements shift without clear clinical oversight. Larger systems may have the bandwidth of a governance structure to monitor these changes and respond, something that resource-limited systems may not.

Question 4: What processes or outcomes will be measurable using FHIR-based dQMs that are not currently measurable?

Expanded measurement scope

[3] Khader, Karim, et al. "The National Healthcare Safety Network's Digital Quality Measures." Journal of the American Medical Informatics Association, 18 Apr. 2024, https://pubmed.ncbi.nlm.nih.gov/38563821/.

Current eCQMs are constrained to measuring the presence or absence of diagnoses and key clinical interventions, typically with limited temporal granularity. dQMs enable the granular measurement of diagnostic pathways. Linked laboratory order and result resources enable temporal measurement of diagnostic testing, such as the time of test order relative to clinical presentation, results of those tests and any follow-up confirmatory testing. This enables measurement of diagnostic algorithm appropriateness - e.g., the percentage of patients with suspected community-acquired pneumonia receiving appropriate initial diagnostic testing. Direct access to microbiological results through standardized FHIR Laboratory Result resources enables measurement of pathogen identification specificity. Rather than simply measuring "blood culture obtained," dQMs can measure "blood culture obtained and organism identified to species level," or "organism identified and susceptibilities performed," with time-stamped precision for each step.

Antimicrobial Stewardship Process Measurement

Current eCQMs cannot reliably measure antimicrobial de-escalation because they lack access to sufficiently detailed antimicrobial and microbiological data. dQMs, through medication administration records, medication statement resources, and laboratory result resources, enable measurement of antimicrobial de-escalation with temporal precision and clinical context. FHIR observation resources for therapeutic drug monitoring levels, linked with medication administration records, enable timely measurement of drug dosage optimization based on observed results of therapeutic drug monitoring, stewardship processes rarely measurable through current eCQM infrastructure.[4]

Infection Prevention

Use of dQMs may paradoxically reduce clinical granularity by broadly capturing conditions in which the underlying risk is not truly modifiable. For example, a dQM designed to measure hospital-onset bacteremia may inadvertently categorize bacteremia resulting from a patient's underlying disease process—rather than from the care delivered—as a preventable complication, even when it is not attributable to the measure.

Question 5: What support can Battelle, as a CBE, provide to measure developers and stewards as dQMs become more widely adopted?

Battelle, as the designated CMS CBE for dQM endorsement, should consider establishing technical training and certification programs, dedicated technical assistance for specialties, and data mapping standards in collaboration with EHR vendors.

Battelle should also provide detailed guidance on when and how eCQM-to-dQM conversions require full re-endorsement versus simplified specification processes. For specialty societies with existing, endorsed measures, this guidance would clarify the pathway for transitioning these measures to FHIR-based dQM format without requiring complete re-testing.

Question 6: How should CBE endorsement and maintenance criteria and submission requirements evolve to accommodate FHIR-based dQMs?

dQM endorsement criteria should include explicit data availability assessment, documenting:

- Current USCDI coverage for required data elements
- Expected timeline for USCDI inclusion if elements are currently excluded
- Known data mapping inconsistencies across major EHR vendors
- Alternative data sources or proxy measures if primary data elements are unavailable

dQM feasibility must account for organizational capacity to implement FHIR APIs, maintain cloud-based data transmission pathways, and support continuous measurement. Current feasibility assessments should be supplemented with explicit assessment of implementation barriers in rural, community-based, and resource-limited settings.

Additionally, rather than requiring fully mature measures for initial endorsement, CBE criteria could accommodate phased implementation where measures are endorsed initially for pilot testing and validation through NHSN CoLab or similar infrastructure, with final full endorsement following successful pilot validation across diverse settings. Continuing to rely on NHSN for capture and reporting will allow organizations to retain more control over reporting of their proprietary quality data as they can pull reports for review and validation rather than funneling data directly into a dQM engine without passing through NHSN. Although FHIR enables virtually real-time, concurrent access to quality data, measure reporting should still follow a cyclical

[4] Office of the National Coordinator for Health Information Technology. "Health Level 7 (HL7) Fast Healthcare Interoperability Resources (FHIR)." *HealthIT.gov*, 22 Sept. 2024, https://www.healthit.gov/topic/standards-technology/standards/fhir.

cadence—such as quarterly, semiannual, or annual reporting—to allow organizations sufficient time to validate their data and make necessary corrections to mappings and workflows.

dQM submissions should include baseline performance data from pilot testing sites, documenting measure distributional properties, stratification by relevant clinical and organizational factors, and comparison to any existing competing measures or legacy eCQM versions.

Conclusion

IDSA recognizes the transformative potential of FHIR-based digital quality measures to modernize clinical quality measurement and reduce measurement burden for healthcare organizations. The transition from eCQMs to dQMs represents a critical evolution in how healthcare systems assess quality and guide improvement.

However, successful dQM implementation and adoption requires deliberate attention to implementation barriers, particularly for smaller healthcare organizations and under-resourced systems. The concentration of FHIR technical expertise among large healthcare systems and EHR vendors threatens to create measurement gaps where historically disadvantaged populations receive less visibility through national quality monitoring systems.

IDSA welcomes continued collaboration with Battelle, CMS, CDC, and the broader quality measurement community as dQM development and implementation accelerates. The principles of clinical rigor, technical feasibility, equity, and specialty society engagement outlined in this response should guide CBE efforts to support successful dQM adoption while maintaining measurement quality and addressing the unique implementation challenges facing diverse healthcare organizations.

Sincerely,

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President

Infectious Diseases Society of America