CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

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ASSESSMENT OF QUALITY MEASURES AND PROGRAMS

QUALITY MEASURE INDEX APRIL 2025 TECHNICAL EXPERT PANEL SUMMARY (D4-14)

SUBMITTED MAY 15, 2025

Prepared exclusively for the Centers for Medicare & Medicaid Services

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LIST OF EXHIBITS

1.0 REPORT PURPOSE

The purpose of the Quality Measure Index (QMI) Technical Expert Summary (TEP) Report (D4-14) is to summarize the key takeaways and recommendations presented by the TEP members for consideration by Booz Allen Hamilton and its partner, Lantana Consulting Group — herein known as the QMI project team or team — during the QMI TEP meeting (D4-13) held on April 15, 2025.

2.0 TEP OVERVIEW

The QMI supports the assessment and selection of quality measures that provide meaningful quality performance information and align with the national health care quality priorities. It also promotes standardization of measure assessments across programs and prioritizes measures that promote positive patient outcomes. The QMI systematically and transparently displays the strengths and limitations of quality measures to facilitate comparisons and aid the Centers for Medicare & Medicaid Services (CMS) in selecting the best measures to develop, implement, and continue to use in, or remove from, quality programs. The QMI project team is convening experts, patients/caregivers, and other stakeholders to provide input on the QMI. Convening the TEP is an important step to promote transparency and obtain balanced input from multiple stakeholders with diverse backgrounds and perspectives. TEP members advise the QMI project team in refining the methodology of the QMI, validating variables used to assess measures, and adapting the index for broader use in CMS quality programs while minimizing burden on programs, developers, and entities involved in measurement.

The TEP is composed of 20 members with differing areas of expertise and perspectives, including quality measures, digital quality measures and measure development, consumer/patient advocacy, clinical experience, payer perspectives, and health care economics. Amy Chin and John Martin served as TEP co-chairs for the April QMI TEP Meeting. Catherine Major served as the internal TEP chair from Booz Allen. Appendix A provides the list of confirmed TEP members, including names, affiliations, and credentials.

3.0 MEETING SUMMARY

The QMI project team convened the TEP via Zoom for Government on April 15, 2025. Of the 20 QMI TEP members, 17 attended the meeting. Appendix A provides QMI TEP members' attendance at the meeting and Appendix B provides a list of CMS and QMI project team members.

3.1 MEETING OBJECTIVES

The objectives of the April QMI TEP meeting were to:

- Share updates on QMI activities since the December QMI TEP meeting
- Obtain TEP feedback on proposed changes to scale for the approach for scoring Measures Under Development (MUDs)
- Gain insight from TEP members on the approach for defining impact variables
- Review QMI reliability and validity testing results and gather feedback on the findings and future analyses

Exhibit 1 describes the April QMI TEP Meeting's accomplishments and key takeaways.

Exhibit 1: Key Takeaways

Key Takeaways
Updates on QMI Activities • The TEP received updates about the QMI priorities for 2025, progress on QMI activities, and timeline for upcoming milestones. **Measures Under Development Scoring Scale** • TEP members supported adopting the proposed methodology for scoring MUDs to align with Measures Under Consideration (MUCs) and Measures in Use (MIUs). **Impact Variables** • The TEP recommended the project team prioritize establishing operational definitions of impact variable concepts and incorporating an impact scoring variable into the QMI methodology. • The TEP supported inclusion of the concept of meaningfulness to patients and clinicians in an impact variable. The TEP suggested gathering feedback from patient partner organizations and other sources to explore opportunities to score measures based on qualitative information related to meaningfulness. • TEP members provided input on opportunities to combine concepts within the impact variable (e.g., "Clinical Significance" and "Value of Health Outcomes") with an emphasis on capturing the impact of a measure on patient wellbeing and whether it has improved health outcomes. • The TEP suggested resources to support the project team's exploration of data availability and data sources for assessing impact variables. **QMI Reliability and Validity** • The TEP agreed with the project team's approach to reliability and validity testing. • The TEP suggested additional methods for consideration in future testing.

3.2 UPDATES ON QMI ACTIVITIES

QMI Overview

The QMI is an internal CMS tool designed to assess if quality measures achieve CMS' strategic objectives. It provides a quantitative assessment of the overall value of a quality measure, complementing other qualitative processes for measure evaluation.

TEP Meeting #1 December 2024: Key Takeaways

- The TEP suggested exploring refinements to how "alignment" is defined in the QMI scoring methodology (e.g., consider alignment across settings or outside CMS programs).
- The TEP agreed on the importance of patient experience measures and supported testing them using the current QMI methodology.
- The TEP expressed the importance of incorporating "impact" into the QMI methodology, but recognized the methodological complexity of assessing the impact of an individual measure.

2024 MUC QMI Scores Distribution

In response to prior questions from the TEP on QMI scoring, the project team reviewed summary statistics to demonstrate QMI score variability by measure lifecycle stage.

- 42 MUCs were scored in 2024.
  - Three of the four domains demonstrated reasonable variability.
  - The Feasibility domain had the least variability due to most measures scoring at the highest level.
  - The Scientific Acceptability domain had the greatest variability, which may indicate potential room for improvement in this area for some individual measures.
- 31 MIUs were scored in 2024.

  - Greater variability was found in MIUs than in MUCs.
  - Currently, an assessment is underway to examine the association between QMI scores for MIUs and the Measure Set Review (MSR) recommendations to continue or discontinue use.
- Eight MUDs were scored in 2023.
  - For MUDs, there were lower scores overall with limited variability in the Agency High Priority domain.
  - It is important to note the small sample size.

Project Progress Updates

The project team reviewed its progress to date, which includes:

- Completed the Environmental Scan Report, verifying the continued relevance of the scoring and classification variables
- Transitioned the scoring and report production code from SAS to R for MUCs, MUDs, and MIUs
- Completed preparations for MIU testing and scoring
- Began to analyze the association between MIU QMI scores and MSR recommendations
- Conducted a reliability and validity assessment of the QMI tool
- Updated the QMI Methodology Report

QMI Priorities for 2025

The project team described its priorities for 2025, which include:

- Updating the QMI in alignment with CMS priorities by redefining the measure focus scoring variable to include chronic conditions and related acute events and wellness and prevention
- Aligning with other quality measure evaluation processes, where feasible, to enhance the efficiency and value of QMI scoring
  - The project team continues to align data fields in the CMS MUC Entry/Review Information Tool with fields needed for QMI scoring to decrease the burden of data entry and to consider opportunities to use dual purpose data to calculate QMI scores.
- Establishing centralized tools (e.g., dashboard) to facilitate CMS' comparison of QMI scores by program lifecycle stage and a variety of other key characteristics
  - As part of the dashboard, the team is constructing a repository to house all QMI scores.

Upcoming Milestones

The project team shared upcoming milestones, which include scoring select MIUs and scoring measures submitted for the MUC list (May 2025), updating the QMI Environmental Scan and data fields (Summer 2025), and facilitating the fall 2025 TEP Meeting (November 2025).

3.3 MEASURES UNDER DEVELOPMENT SCORING SCALE

The project team introduced adapting the scoring methodology for MUDs to align with MUCs and MIUs to increase the utility and interpretability of QMI scores across the measure lifecycle. Scoring MUDs provides CMS with information regarding measure strengths and weaknesses early in the measure development process to inform decisions about whether to continue to develop a measure or how to refine it. The scoring scale update would also support clear trending of individual measure scores as a measure advances through the measure lifecycle.

The team described the proposed change, which is to score MUDs using the full four-domain structure, shifting the maximum score to 66.7 (since the measure performance variable and scientific acceptability domains are expected to be zero). This change will shift the overall distribution of QMI scores to the left, meaning lower overall. However, it does not change the interpretation of MUD scores in relation to each other.

The TEP provided the following feedback:

- The TEP supported adopting the proposed methodology for scoring MUDs to align with MUCs and MIUs.
  - Previously scored measures would need to be re-calculated so that trends can easily be identified in the past and in the future.
- TEP members requested additional information about the small sample size of MUDs included in 2023 scoring and the impact, if any, on the revised scoring approach.
  - The team clarified that the proposed refinement would remain regardless of number of MUDs scored and is driven by the expectation of zeros in two domains opposed to the volume of measures.

The TEP agreed with aligning the MUD scoring scale with MUCs and MIUs.

- One TEP member requested clarification on the intended use of QMI scores for MUDs and if feasibility testing is available at the development stage of the measure lifecycle.
  - The team noted that QMI scores in the early development stage may inform CMS' decision to continue to pursue development and that feasibility testing is expected at this stage in the process. The team acknowledged that there may also be the potential to score measures later in their development (e.g., after testing is performed), but it would need to consider the implications of this on the score.
- Another TEP member asked about the weighting of domains.
  - The team responded that previous TEPs agreed through consensus that the domain should be of equal importance.

3.4 IMPACT VARIABLES

The project team discussed its initial exploration of incorporating an impact variable into the QMI methodology to assess the impact of individual quality measures on health outcomes, costs, population health, etc. The team reviewed recommendations for pursuing concepts for inclusion in the impact variable based on whether the information is currently captured in the QMI methodology and on the availability of data sources. The team is also considering opportunities to incorporate Impact Assessment Report methodologies related to how impact is assessed and calculated (e.g., costs avoided estimates) to be incorporated into the QMI methodology.

The TEP provided the following suggestions for the impact variable concepts:

- Assessing Meaningfulness to Patients and Clinicians
  - The TEP sought clarification on the recommendation to not pursue this concept for the impact variable.
    - The team suggested not to pursue this variable since it is already captured elsewhere in the methodology (e.g., patient engagement variable in the Importance domain). The team considered the availability of data sources and burden to measure developers for this suggestion.
  - TEP members recommended continuing to explore "Assessing Meaningfulness to Patients and Clinicians."
    - One TEP member suggested combining "Assessing Meaningfulness to Patients and Clinicians" with "Value of Health Outcomes."
    - TEP members recommended gathering feedback from patient partner organizations and other sources to better capture meaningfulness to patients and clinicians.
    - A TEP member noted concern regarding "whose voice between the patient and clinician" drives measure development.

The TEP supported the continued pursuit of an impact variable in the QMI and recommended further consideration of the definitions and inclusion of the underlying concepts. TEP members advocated for the inclusion of the concepts related to meaningfulness to patients and clinicians, value of health outcomes, and clinical significance, with an emphasis on capturing the impact of a measure on patient wellbeing.

    - One TEP member acknowledged the challenge in calculating a quantitative score for "Assessing Meaningfulness to Patients and Clinicians" given the subjectivity of the concept and qualitative nature of associated data.

- Reach of a Measure
  - The team suggested pursuing this variable since it incorporates population- and program-specific factors assessing a measure's potential impact.
- Clinical Significance
  - The team suggested pursuing this variable since it incorporates how an intervention leads to health improvement.
  - The TEP requested clarification regarding whether significance is statistically driven.
    - The team clarified that further definition of the "Clinical Significance" concept is dependent on data sources and availability.
  - TEP members suggested combining "Clinical Significance" with "Value of Health Outcomes" to better understand the quality of care provided and health outcomes.
    - A TEP member recommended expanding the "Clinical Significance" concept to consider health benefits related to outcomes, patient wellbeing, and patient experience.
    - Other TEP members agreed and noted the impact variable should focus on the improvement to health outcomes.
- Value of Health Outcomes
  - The team proposed it not pursue this variable as it may potentially be combined with clinical significance, pending data availability.
  - Some TEP members recommended the project team pursue the "Value of Health Outcomes" concept as a distinct metric.
  - One TEP member suggested considering the relationship of various measures and noted that the team should consider the timing of data, as lagged data may provide little insight. The TEP member also noted the complexity of quantifying the value of health outcomes.
- Potential Return on Investment
  - The team proposed it pursue this variable as it incorporates cost considerations, which are a valuable factor that is not currently included in the methodology.
  - A TEP member suggested that the value equation and quality improvement metrics should be prioritized over return on investment.
  - TEP members noted the existing emphasis on return on investment within the broader health care system and that other factors (e.g., patient and clinician input) may be more important considerations for assessing measure impact.
- The TEP provided the following input on potential data sources the team should explore to determine the availability of data related to the concepts considered for the impact variable.
  - The Institute for Health Metrics and Evaluation
  - The Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS)
  - American Occupational Therapy Association
  - American Physical Therapy Association
  - Healthcare Services Research Network
  - Veterans Health Administration (VA)
  - Patient & Family Centered Care (PFCC)
  - Institute for Healthcare Improvement (IHI) survey
  - Aggregating feedback across measure developers
  - Patient-Centered Outcomes Research Institute (PCORI)
  - Patient insight forums

As a next step, the team will prioritize defining and testing an impact scoring variable in the QMI methodology.

3.5 RELIABILITY AND VALIDITY TESTING

The project team reviewed the approach for testing the reliability and validity of the QMI. Reliability and validity were assessed across variables within each domain (lower level) and domains within the QMI (higher level) using combined 2024 MUC and MIU data, since they are similarly calculated and have a larger sample size.

For the reliability assessment, the team used a three-pronged approach to test internal consistency at both levels.

- Pairwise correlation
  - The correlations are fairly good; they range from weak to moderate.
  - There are no negative correlations between the domains, which gives possible evidence of reliability.
- Cronbach's alpha (gold standard for assessing internal consistency)
  - Acceptable would be a calculable alpha that is non-negative and therefore valid.
    - All domains had positive alphas.
    - The overall QMI alpha was 0.75, which is strong evidence of reliability.
- Variance inflation factor (VIF)
  - A VIF above 7 is undesirable.
  - VIFs ranged from 1.02 to 2.34, which gives evidence of reliability that none of the indicators are redundant and each contributes unique variance to the QMI score.

For the validity assessment, the project team assessed convergent validity through an analysis of the correlation between QMI scores and Consensus-Based Entity (CBE) endorsement categories (Endorsed vs. Failed/Removed) (i.e., a related scale). Face validity was established previously through TEP consensus. Additionally, the project team considered construct validity using confirmatory factor analysis, but did not pursue it fully due to small sample size, sparse domains, and low variability. The team found moderate correlation between the QMI Overall score and CBE endorsement category. TEP members suggested the team explore cluster discriminant and Bayesian framework as additional methodologies in future analysis.

The TEP agreed with the team's approach for reliability and validity testing and that results build evidence of the tool's reliability and validity.

One TEP member expressed support for the testing and commented on the robustness of the analysis. The TEP member also noted that cluster analysis or discriminant analysis may support the identification of commonalities through data reduction. The TEP member sent the following citations to the team after the meeting:

- Modern Factor Analysis 3rd Edition by Harry Harman, The University of Chicago Press, 1976
- Multiple Regression in Behavioral Research by Fred Kerlinger and Elazar Pedhazur, Holt Rinehart and Winston, Inc. 1973
- Applied Multivariate Analysis and Experimental Designs by N.K Namboodiri, L. Carter and H. Blalock, McGraw-Hill, 1975
- The Cult of Statistical Significance: How the Standard Error Costs US Jobs, Justice and Lives by S. Ziliak and D. McClosky, The University of Michigan Press, 2011
- Causal Models in the Social Sciences Edited by Hubert Blalock, Aldine Publishing, Chicago, 1971
- Experimental And Quasi-Experimental Designs for Research by Donald Campbell and Julian Stanley, Houghton Mifflin Co. 1963. Reprinted from the Handbook of Research on Teaching

Another TEP member suggested an analysis (e.g., measure signal to noise or use Bayesian methods) to assess the QMI's scoring precision (e.g., assessing the difference between a QMI score of 80 and a score of 85). The TEP member sent the following citation to the team after the meeting: Morris, C. N. (1983). Parametric Empirical Bayes

Inference: Theory and Applications. Journal of the American Statistical Association, 78(381), 47–55. https://doi.org/10.1080/01621459.1983.10477920.

TEP members expressed interest in future discussions related to the reliability and validity testing. The team anticipates conducting reliability and validity testing of the QMI tool annually, especially when new scoring variables or domains are added.

4.0 NEXT STEPS

The QMI project team provided an overview of next steps:

- The QMI project team will summarize the TEP meeting and share considerations with CMS.
- The next TEP meeting is planned for November/December 2025.
- The QMI project team will continue gathering TEP feedback throughout the QMI maintenance and scoring process.

Appendix A. QMI TEP Members

Exhibit 2 identifies the QMI TEP members and whether they attended the April 2025 TEP meeting.

Exhibit 2: QMI TEP Members and Attendance

Member Name, Role, Organization[1]	Present at Meeting
John Marc Alban, MS, RN Associate Director Quality Measurement and Informatics, *Joint Commission*	Yes
Mary Baliker, BS* Patient	Yes
Amy Chin, MS (Co-chair) Assistant Vice President Value Management Office, *Hospital for Special Surgery*	Yes
Anne Coltman, MSHA, MS, RDN, LDN, FAND, FACHE Senior Director of Quality, Standards, and Interoperability *Commission on Dietetic Registration* *(Indicated prior to the meeting that she is no longer able to serve on the TEP)*	
Elizabeth Drye, MD, SM Chief Scientific Officer & Vice President, Quality Measurement National Quality Forum & Joint Commission	Yes
Tricia K. Elliott, DHA, MBA, CPHQ, FNAHQ Vice President of Quality Implementation *National Committee for Quality Assurance*	Yes
Jacqueline N. Grady, MS Director of Measure Specification, Reporting Production and Implementation, *Yale/YNHHS Center for Outcomes Research and Evaluation*	Yes
Amy Nguyen Howell, MD, MBA, FAAFP Adjunct Associate Professor *University of Southern CA, Sol Price School of Public Policy*	Yes
Emily Kircher, MPH, BSN, RN Quality Program Manager *Vituity*	Yes
Joseph Kunisch, PhD, RN, CPHQ Vice President of Quality Programs *Harris Health System*	Yes
Robert C. Lloyd, PhD Senior Advisor Improvement Science and Methods *Institute for Healthcare Improvement*	Yes
Carolyn Lockwood, MSN, RN Senior Director, Performance Measurement, *Pharmacy Quality Alliance*	Yes
Paloma Luisi, MPH Research Scientist/Bureau Director New York State Department of Health	
John Martin, PhD, MPH (Co-chair) VP, Data Science, *Premier, Inc.*	Yes

[1] An asterisk [*] denotes a consumer/patient-caregiver representative.

Member Name, Role, Organization[1]	Present at Meeting
Connie Lee Montgomery* Patient/ Family Caregiver and Retired OTR	Yes
Erin O'Rourke, BS Executive Director, Clinical Performance and Transformation *America's Health Insurance Plans*	
Jill Shuemaker, RN, CPHIMSS, FHIMSS Director, Clinician Measures *The American Board of Family Medicine Foundation* *Center for Professionalism & Value in Health Care*	Yes
Sam Simon, PhD Senior Fellow *Mathematica*	Yes
Samantha Tierney, MPH Senior Scientist, Performance Measurement *American College of Physicians*	Yes
Janice Tufte* Patient *Person and Family Engagement Network Advisory*	Yes

Appendix B. CMS and QMI Project Team Members

Exhibit 3 indicates CMS and the QMI project team members.

Exhibit 3: CMS and QMI Project Team

CMS	
Gregory Stark	Contracting Officer's Representative
Helen Dollar-Maples, RN, MSN	Director, Division of Program and Measurement Support
Marsha Smith, MD	CMS Medical Officer
Mei Zhang	Data Scientist, Division of Program and Measurement Support; QMI Lead
Nidhi Singh-Shah, MPH	Deputy Director, Division of Program and Measurement Support; QMI Lead

QMI Project Team	
Catherine Major, MBA	QMI TEP Chair *Booz Allen Hamilton*
Christina Marsh, PhD	Program Director *Booz Allen Hamilton*
Christina Hedge	Officer in Charge *Booz Allen Hamilton*
Jamie Pilla, MHSA, CPHQ	Project Manager *Booz Allen Hamilton*
Melissa Moss, PhD	Lead Statistician *Booz Allen Hamilton*
Nicolette Mehas, PharmD, CPHQ	QMI Workstream Lead *Booz Allen Hamilton*
Neil McNinch, PhD(c), MS, RN	Methodology Lead *Booz Allen Hamilton*
Matt Sapiano, PhD	Director of Data Science *Lantana Consulting Group*
Cate Knockenhauer, MSc	Statistician II *Lantana Consulting Group*
Hector Cariello, MPH	Research Analyst II *Lantana Consulting Group*
Ola Fakorede, PMP	Project Manager *Lantana Consulting Group*
Olga Kogan, BSN, RN	Research Analyst II *Lantana Consulting Group*
Ulaina Tariq, MSc	Public Health Data Analyst *Lantana Consulting Group*

Appendix C. April 2025 QMI TEP Meeting Agenda

April 2025 QMI TEP

Meeting Agenda: April 15, 2025. 11 am–1 pm ET

Time	Topic
11:00–11:05 AM	WELCOME AND MEETING OBJECTIVES • Welcome and overview of meeting agenda
11:05–11:10 AM	ROLL CALL AND DISCLOSURES • TEP member introductions
11:10–11:20 AM	RECAP AND PROGRESS TO DATE • Overview of accomplishments since previous meeting
11:20–11:55 AM	MEASURES UNDER DEVELOPMENT SCORING SCALE • Obtain feedback on QMI scoring scale alignment
11:55 AM–12:30 PM	IMPACT VARIABLES • Gather input on potential new QMI variables
12:30–12:55 PM	RELIABILITY AND VALIDITY TESTING • Share and discuss findings
12:55–1:00 PM	NEXT STEPS • Closing remarks and next steps