Partnership for Quality Measurement
Powered by Battelle

Fall 2022 Cycle

All-Cause Admissions and Readmissions Final Technical Report

October 2023

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Executive Summary

Avoiding hospital readmissions is a key goal for improving patient outcomes and reducing health care expenditures and resource use. Depending on the diagnosis, one in three patients can expect to be readmitted.[1] In addition, Medicare and Medicaid patients are the most likely groups to be readmitted. Proper discharge practices and continually integrated and involved care can reduce readmissions.[2]

Quality measures are necessary tools for assessing reductions in readmission rates, as well as the extent to which health care stakeholders are using evidence-based strategies to advance the quality of care. To support this effort, Battelle endorses and maintains performance measures related to resource use, namely hospital all-cause admissions and readmissions, through a standardized, consensus-based process.

For this project's measure review cycle, four measures were submitted for endorsement consideration (Table 1). Two measures (CBE #2881 and CBE #3703) were withdrawn from consideration after the Scientific Methods Panel (SMP) review and were therefore not reviewed by the committee. As a result, endorsement for CBE #2881 is maintained until a future endorsement review cycle, and endorsement was not considered for the new measure, CBE #3703. Of the remaining two measures reviewed by the All-Cause Admissions and Readmissions committee, one measure was recommended for endorsement and one measure was not recommended for endorsement. The Consensus Standards Approval Committee (CSAC) upheld the committee's endorsement recommendation for CBE #3490 but sent CBE #3474 back for reconsideration. Endorsement for CBE #3474 is maintained until the measure is reviewed again within the Fall 2023 cycle.

Effective March 27, 2023, the National Quality Forum (NQF) is no longer the consensus-based entity (CBE) funded through the Centers for Medicare & Medicaid Services (CMS) National Consensus Development and Strategic Planning for Health Care Quality Measurement Contract. Battelle has been selected to oversee the endorsement & maintenance (E&M) of clinical quality and cost/resource use measures. Since the Fall 2022 cycle launched at NQF, measures submitted for Fall 2022 E&M cycle continued along the prior E&M protocols that were in place at time of the Fall 2022 "Intent to Submit." In addition, the Scientific Methods Panel review and the committee's measure evaluation meeting for the Fall 2022 cycle were conducted under NQF. Battelle took over the E&M work beginning with the public comment period to close out the Fall 2022 cycle. This included launching the Fall 2022 post-comment period, convening the E&M committees for the post-comment meeting, convening the CSAC to render a final endorsement decision, and executing the Appeals period.

Table 1. Measures Submitted for Endorsement Consideration

Measure Number	Measure Title	New/ Maintenance	Developer/Steward	Final Endorsement Decision
2881	Excess days in acute care (EDAC) after hospitalization for acute myocardial infarction (AMI)	Maintenance	Yale New Haven Health Services Corporation – Center for Outcomes Research and Evaluation (Yale CORE)/Centers for Medicare & Medicaid Services (CMS)	Withdrawn
3490	Admission and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy	Maintenance	Yale CORE/CMS	Endorsed
3474	Hospital-level, risk-standardized payment associated with a 90-day episode of care for elective primary total hip and/or total knee arthroplasty (THA/TKA)	Maintenance	Yale CORE/CMS	Endorsed – pending reconsideration
3703	Hospitalization for Ambulatory Care Sensitive Conditions for Dual Eligible Beneficiaries enrolled in Medicare Fee-for-Service (Duals-1 FFS) or Medicare-Medicaid Plans (Duals-1 MMP)	New	Yale CORE/CMS	Withdrawn

Summaries of the measure evaluation meetings are linked within the body of the report. Detailed summaries of the committee's discussion and ratings of the criteria for each measure are in Appendix A.

Introduction

Hospital readmissions, defined as returning to hospital for care related to the initial admission within 30 to 90 days,[3] and emergency department (ED) visits lead to increased costs and decreased quality of life for patients. Unplanned hospital readmissions are estimated to annually cost up to $20 billion.[2] Interventions at the different stages of care, including pre- and post-discharge, can improve outcomes. In addition to clinical reasons, some social determinants of health factors may play a role in likelihood of readmission.[2]

Quality and cost/resource use measures are tools to measure or quantify health care processes, outcomes, patient perceptions, and organizational structure and/or systems that are associated with the delivery of high-quality health care. Furthermore, quality and cost/resource use measures can be a powerful tool in helping identify performance gaps in care that may result in a preventable hospitalization or rehospitalization.

Battelle, a CBE, convenes volunteer committees to evaluate and build consensus around quality measures for endorsement based on a standardized set of criteria. For the Fall 2022 cycle, the All-Cause Admissions and Readmissions standing committee reviewed measures focused on ED use for chemotherapy patients and total episode of care costs for elective total knee and total hip-joint replacement patients.

ED Use for Chemotherapy Patients

Chemotherapy can have severe side effects, which, if not managed appropriately, can reduce the quality of life for patients and increase health care utilization and costs. Chemotherapy patients have an average of one hospital admission and two ED visits per year and 40% of these admissions and 50% of these ED visits stem from complications of chemotherapy, respectively.[4] Admissions and ED visits are costly, with those experiencing chemotherapy-related adverse events having an average of $12,907 in additional hospitalization expenditures per person per year.[5] Coordination of care and better management of chemotherapy-related symptoms in the outpatient setting can decrease hospital visits among patients receiving chemotherapy.

Total Episode of Care Costs for Elective Total Knee and Total Hip-Joint Replacement

Total hip and total knee arthroplasty (THA/TKA) are procedures with substantial variability in costs of care. Hospitals providing these procedures have an opportunity to consider actionable improvements and efficiencies on a broader scale to impact the value of care. Measuring the total costs associated with THA/TKA not only provides monetary transparency but allows hospitals the ability to target high-cost interventions or preventable outcomes (e.g., readmissions) to reduce costs while not jeopardizing the quality of care provided.

All-Cause Admissions and Readmissions Measure Evaluation

For this measure review cycle, the All-Cause Admissions and Readmissions standing committee (Appendix B) evaluated two measures undergoing maintenance review using standard measure evaluation criteria. One measure, CBE #3474, was sent back to the committee for reconsideration by the CSAC. Endorsement for this measure will be maintained until it is reviewed again during the Fall 2023 cycle. Additionally, two measures (CBE #2881 and CBE #3703) were not evaluated by the committee as they were withdrawn from consideration by the developer after the SMP's review of scientific acceptability (i.e., reliability and validity). Therefore, endorsement is maintained for CBE #2881 until future endorsement review, and endorsement was not considered for the new measure, CBE #3703.

Table 2a. Number of Fall 2022 All-Cause Admissions and Readmissions Measures Submitted and Reviewed

	Maintenance	New	Total
Number of measures submitted for endorsement review	3	1	4
Number of measures withdrawn from consideration*	1	1	2
Number of measures reviewed by the committee	2	0	2
Number of measures endorsed	1	0	1
Number of measures not endorsed	0	0	0
Number of measures sent back for reconsideration by the CSAC	1	0	1

**Measure developers/stewards can withdraw a measure from measure endorsement review at any point before the CSAC meeting. Table 2b provides a summary of withdrawn measures.*

Table 2b. Measures Withdrawn from Consideration

Measure Number	Measure Title	Developer/Steward	New/Maintenance	Reason for Withdrawal
3703	Hospitalization for Ambulatory Care Sensitive Conditions for Dual Eligible Beneficiaries enrolled in Medicare Fee-for-Service (Duals-1 FFS) or Medicare-Medicaid Plans (Duals-1 MMP)	Yale CORE/CMS	New	Withdrawn after SMP review
2881	Excess days in acute care (EDAC) after hospitalization for acute myocardial infarction (AMI)	Yale CORE/CMS	Maintenance	Withdrawn after SMP review; developer will re-evaluate the reliability testing

Scientific Methods Panel Measure Evaluation

Prior to the committee's review, the SMP reviewed two measures (CBE #2881 and CBE #3703) in this topic area for scientific acceptability (i.e., reliability and validity) during its measure evaluation meeting. The SMP passed CBE #2881 on validity, but it did not pass the measure on reliability as the measure score reliability, as assessed by the split-sample method and with the updated minimum threshold of 50 cases, was 0.402. For CBE #3703, the SMP passed the measure on both reliability and validity. However, after the SMP review, the developer requested to withdraw both measures from endorsement consideration.

Comments Received Prior to Standing Committee Evaluation

For this evaluation cycle, pre-evaluation public commenting was conducted under NQF. Two pre-evaluation public comments for CBE #3474 were submitted and shared with the standing committee prior to the measure evaluation meetings on February 22 and 28, 2023. One comment raised concern with the reliability testing results and the second comment questioned whether lower cost is better and requested an analysis of costs with this measure compared to a quality indicator. A summary of comments is provided in Appendix A.

Comments Received After Standing Committee Evaluation

Following the standing committee's measure evaluation meeting, the committee endorsement recommendations were posted on the PQM website for public comment. The commenting period opened on March 28, 2023, and closed on May 5, 2023. The committee received four comments pertaining to CBE #3474. One comment was from the measure developer to support the committee's discussions and revote on the validity criterion during the post-comment meeting, as the committee did not reach consensus on validity during the February measure evaluation meetings. The developer provided additional supporting information for the validity testing and risk adjustment approach. The remaining three comments did not support the measure, expressing that the measure does not seem timely and that moving to digital quality measures is a CMS priority. In addition, one commenter noted that there is an increase in ambulatory major joint surgeries, which are not captured in this measure. Battelle convened the committee for the Fall 2022 post-comment web meeting June 9, 2023, to review and respond to the full text of comments received. A summary of comments for each measure reviewed is provided in Appendix A.

Summary of Potential High-Priority Gaps

No potential high-priority measurement gap areas were identified.

Summary of Major Concerns or Methodological Issues

Linking Cost and Quality Measures

During the review of CBE #3474, the standing committee expressed the need for correlation analyses between cost measures to quality measures, as the absence of a clearly defined relationship between quality and cost makes it challenging for patients to truly know whether

lower cost is better. Current endorsement criteria do not require cost measures to be correlated to a quality indicator. Battelle will explore this issue further with the SMP to garner input on potential updates to the evaluation criteria for cost measures due to these unintended consequence concerns expressed by E&M committee members. Details of the standing committee's discussion are included in Appendix A.

Risk Adjustment of Social Risk Factors

During the review of CBE #3474, the committee expressed concerns regarding the accuracy of cost and outcome measures without appropriate adjustment for and/or consideration of social risk factors (e.g., income, urban/rural residence, education). Some committee members emphasized the need to include social risk factors within quality measures, especially cost and resource use due to the limited control that hospitals and other health care providers may have on impacting these risk factors. These continued discussions underscore the need for more guidance in this area for both measure developers and measure evaluation bodies. Battelle will explore this issue further with the SMP to garner input on potential updates to evaluation criteria to address this expressed need. Details of the standing committee's discussion are included in Appendix A.

References

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Appendix A: Details of Measure Evaluation

Rating Scale: H=High; **M**=Moderate; **L**=Low; **I**=Insufficient; **NA**=Not Applicable

Under the NQF process, quorum is 66% of active standing committee members minus any recused standing committee members. Due to the exclusion of recused standing committee members from the quorum calculation, the required quorum for live voting may vary among measures. Quorum (15 out of 22 active standing committee members) was reached and maintained throughout the full measure evaluation meetings on February 22 and 28, 2023. Vote totals may differ between measure criteria and between measures because standing committee members may have joined the meeting late, stepped away for a portion of the meeting, or had to leave the meeting before voting was complete. The vote totals listed below reflect the committee members present and eligible to vote at the time of the vote.

A measure is recommended for endorsement by the standing committee when greater than 60% of voting members select a passing vote option (i.e., Pass, High and Moderate, or Yes) on all must-pass criteria and overall suitability for endorsement. A measure is not recommended for endorsement when less than 40% of voting members select a passing vote option on any must-pass criterion or overall suitability for endorsement

A.1 Measures Endorsed

CBE #3490 Admission and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy (Yale CORE/CMS)

Staff Assessment | Specifications

Numerator Statement: The Admissions and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy measure provides facilities with information to improve the quality of care delivered for patients undergoing outpatient chemotherapy treatment. The measure calculates two mutually exclusive outcomes: (1) one or more inpatient admissions for anemia, dehydration, diarrhea, emesis, fever, nausea, neutropenia, pain, pneumonia, or sepsis within 30 days of chemotherapy treatment and (2) one or more ED visits or stand-alone observation stays for any of the same 10 diagnoses within 30 days of chemotherapy treatment. These 10 listed conditions are potentially preventable through appropriately managed outpatient care. To be counted as an outcome, the qualifying diagnosis on the admission or ED visit claim must be (1) the principal diagnosis or (2) a secondary diagnosis accompanied by a principal diagnosis of cancer.

Denominator Statement: The target population for this measure is Medicare Fee-for-Service (FFS) patients aged 18 years or older at the start of the performance period with a diagnosis of cancer receiving chemotherapy treatment in a hospital outpatient setting.

Exclusions: The measure excludes Patients with a diagnosis of leukemia at any time during the performance period. Rationale: We exclude patients with leukemia from the measure because the high toxicity of treatment and recurrence of disease leads to admissions among this population that do not reflect the quality of outpatient care. Patients with leukemia have a higher expected admission rate due to frequent relapse, which is not the type of admission the measure intends to capture. Patients who were not enrolled in Medicare FFS Parts A and B in the year before any outpatient chemotherapy treatment during the performance period. Rationale: The measure excludes these patients to ensure that complete patient diagnosis data will be available for the risk-adjustment model, which uses the year before the first chemotherapy treatment during the period to identify comorbidities. Patients who do not have at least one outpatient chemotherapy treatment followed by continuous enrollment in Medicare FFS Parts A and B in the 30 days after the treatment. Rationale: The measure excludes these patients to ensure that full data will be available for outcome assessment. Cases in which patients receive chemotherapy to treat conditions other than cancer such as treatment of auto-immune diseases. Rationale: The measure is intended to assess the quality of care provided to cancer patients receiving outpatient chemotherapy.

Adjustment/Stratification: Statistical risk model, Stratification by risk category/subgroup (21 risk factors)

Level of Analysis: Facility

Setting of Care: Outpatient Services

Type of Measure: Outcome

Data Source: Claims; Enrollment Data

Measure Steward: Centers for Medicare & Medicaid Services

STANDING COMMITTEE EVALUATION

Table A.1-1.1 Importance to Measure and Report (MUST PASS)

Criterion	Total Votes	Rationale
1a. Evidence	• Total Votes-19; Pass-19; No Pass-0 (19/19 – 100%, Pass)	• The committee recognized that this maintenance measure has a logic model depicting timely access to chemotherapy side effect management, which leads to decreased likelihood of preventable admissions and ED visits for patients receiving outpatient chemotherapy. • The developer submitted additional studies and literature on quality improvement initiatives aimed at reducing preventable hospitalizations, reducing emergency department visits, and enhancing outpatient management for cancer patients. • Key strategies include implementing an algorithm to identify high-risk patients, providing these data to clinicians providing patient care (including infusion nurses), standardizing symptom management, and using a 24/7 nurse on-call service. • The standing committee did not raise any questions or concerns and passed the measure on evidence.

1b. Performance Gap	• Total Votes-19; H-1; M-18; L-0; I-0 (19/19 – 100%, Pass)	• The developer provided measure scores for each facility type and outcome using data from the 2022 Endorsement Maintenance (EM) Dataset, which includes performance data from Jan 1, 2021 to November 30, 2021.
		  • For PCH-HOPDs [n = 11], the developer reported a median RSAR of 11.8, and 4.7 for the RSEDR.
		  • For Non-PCH HOPDs [n = 3,278], the developer reports a median RSAR of 9.3, and 5.2 for the RSEDR.
		• The standing committee recognized that patients exhibiting social risk factors have lower admission rates, but their ED visits remain at similar or slightly increased levels. This suggests that these patients might benefit from outpatient care but limited access to such facilities leads them to seek care in ED.
		• The standing committee agreed that there is an opportunity for accountable entities to modify these outcomes through various interventions supported by the literature.
		• The standing committee acknowledged the disparities data comparing measure score distributions for both outcomes across four social risk factors; dual eligibility (DE), low AHRQ Social Economic Status (SES), race (Black), and rurality, stratified into quartiles of the proportion of patients with each social risk factor.
		• For RSAR, the developer reports slightly higher measure scores for low AHRQ SES, DE, and Race, Black variables.
		  • Low AHRQ SES Q1 Median: 9.3, Q4 Median: 9.5
		  • DE Q1 Median: 9.2, Q4 Median: 9.6
		  • Race, Black Q1 Median: 9.1, Q4 Median: 9.6

Criterion	Total Votes	Rationale
		• For the rural indicator, RSARs are lower for the fourth quartile (9.3) compared with the first quartile (9.7). • For the RSER, the developer reports similar measure scores between the first and fourth quartiles for all except the rural variable. • Low AHRQ SES Q1 Median: 5.2, Q4 Median: 5.2 • DE Q1 Median: 5.1, Q4 Median: 5.2 • Race, Black Q1 Median: 5.4, Q4 Median: 5.0 • For the rural variable, RSEDRs are higher for the fourth quartile (5.5); meanwhile for the first quartile (4.9), RSEDRs are lower across the entire distribution. • The standing committee passed the measure on performance gap.

Table A.1-1.2. Scientific Acceptability of Measure Properties (MUST PASS)

Criterion	Total Votes	Rationale
2a. Reliability	• Total Votes-19; H-3; M-16; L-0; I-0 (19/19 – 100%, Pass)	• The committee noted that that reliability testing was conducted at the accountable entity level: • The developer estimated facility-level reliability using the signal-to-noise (SNR) ratio for hospitals with at least 25 or more cases. • For cancer hospitals (n=11), the developer reports a median reliability of 0.933 for the RSAR, and 0.958 for the RSEDR. • Cancer hospitals at the 25th percentile have a 0.909 RSAR and a 0.942 RSEDR, while those at the 75th percentile have a 0.972 RSAR and a 0.983 RSEDR. • For non-cancer hospitals (n=1,474), the developer reports a median reliability of 0.667 for the RSAR, and 0.683 for the RSEDR. • Non-cancer hospitals at the 25th percentile have a 0.504 RSAR and a 0.522 RSEDR, while those at the 75th percentile have a 0.808 RSAR and a 0.818 RSEDR. • The developer noted that reliability testing results are sufficiently high for both PCH HOPDs (RSAR, 0.933; RSEDR, 0.958) and non-PCH HOPDs (RSAR, 0.667; RSEDR, 0.683) for facilities with at least 25 admissions during the performance year. • The standing committee discussed the difference in score-level reliability signal-to-noise estimates for PPS-Exempt Cancer Hospitals (PCHs) and non– PPS-Exempt Cancer Hospitals (0.93 and 0.667, respectively). The developer clarified that a volume cutoff was implemented. • Satisfied with this explanation, the standing committee passed the measure on reliability.

Criterion	Total Votes	Rationale

2b. Validity	• Total Votes-17; H-5; M-12; L-0; I-0 (17/17 – 100%, Pass)	• The committee noted that the developer tried to conduct empirical testing at the score level by analyzing various endorsed measures along with CMS programmatic measures but were unable to identify comparable measures to benchmark with the chemotherapy measure.
		• Instead, the developer compared the distribution of performance scores of CBE #3490 between 2019 and 2021.
		  • Results from 2020 public reporting were omitted due to limited data available because of the CMS Coronavirus disease 2019 data waiver.
		  • For PCH-HOPDs in 2019, the developer reports a national observed admissions rate of 14.0%, compared with 11.7% in 2021, and a national 2019 observed ED visit rate of 6.3%, compared with 4.9% in 2021.
		  • For non-PCH HOPDs in 2019, the national observed admissions rate was 12.6%, compared with 9.4% in 2021; the national observed ED visit rate was 5.9% in 2019, compared with 5.2% in 2021.
		• For the previous submission of this measure, the developer conducted face validity testing using a Technical Expert Panel, Expert Work Groups (EWG), as well as extensive Public Comments.
		  • The measure score as an indicator of quality was systematically assessed for face validity by confidentially soliciting the EWG members' agreement with the following statement via an online survey: "The risk-standardized admissions rates and risk standardized emergency department rates obtained from the chemotherapy measure as specified can be used to distinguish between better and worse quality facilities."
		  • The developer reported perfect agreement (100%) among EWG members that the measure has face validity.
		• The standing committee discussed and agreed that the improvement over time does demonstrate validity adequately.
		• In its review of the potential threats to validity, the committee noted that the measure exclusions are necessary to prevent distortion of the measure score and unfairly disadvantage certain hospitals.
		• The developer notes that no patients or observations were excluded due to missing data.
		• The committee acknowledged the four risk-adjustment models and extensive analysis on social risk factors for this measure and passed it on validity.

Table A.1-1.3. Feasibility

Criterion	Total Votes	Rationale
3. Feasibility	• Total Votes-17; H-10; M-7; L-0; I-0 (17/17 – 100%, Pass)	• Regarding feasibility, the committee acknowledged that there have been no reported difficulties regarding data collection, availability, missing data, timing and frequency, or any other implementation issues. • The committee did not raise any concerns and passed the measure on feasibility.

Table A.1-1.4. Use and Usability (USE IS MUST PASS FOR MAINTENANCE MEASURES)

Criterion	Total Votes	Rationale
4a. Use	• Total Votes-17; H-10; M-7; L-0; I-0 (17/17 – 100%, Pass)	• The committee acknowledged that the measure is publicly reported in the Hospital Outpatient Quality Reporting (OQR) Program and PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program. • The committee did not have any questions or concerns and passed the measure on use.

4b. Usability	• Total Votes-18; H-8; M-9; L-1; I-0 (17/18 – 94.4%, Pass)	• The committee noted improvement in both observed national rates and facility-level risk-standardized scores between 2019 and 2021 for both PCH and non-PCH-HOPDs.
		  • Among non-PCH HOPDs, the median performance on the RSAR was 12% in 2019, and 9.3% in 2021.
		  • The median performance on the RSDER for non-PCH HOPDs was 6.1% in 2019, and 5.2% in 2021.
		  • Among PCH HOPDs, the median performance on the RSAR was 14.5% in 2019, and 11.8% in 2021.
		  • The median performance on the RSDER for PCH HOPDs was 6.1% in 2019, and 4.7% in 2021.
		• The committee did not have any concerns and passed the measure on usability.

Table A.1-1.5. Related and Competing Measures

Criterion	Related and/or Competing Measure(s)	Rationale
5. Related and Competing	• CBE #0383 Oncology: Medical and Radiation - Plan of Care for Pain • CBE #0384 Asthma in Younger Adults Admission Rate (PQI 15) • CBE #0384e Oncology: Medical and Radiation - Pain Intensity Quantified	• The developer notes that the three related measures narrowly focus on pain management and/or fatigue/anemia. • The proposed measure does not target a specific symptom, but rather assesses the overall management of ten important symptoms and complications that were more frequently cited in literature as reasons for ED visits and inpatient admissions following outpatient chemotherapy. • The committee did not have any recommendations for harmonization across these measures.

Table A.1-1.6. Standing Committee Recommendation for Endorsement

Committee Endorsement Recommendation	Total Votes	Rationale
Recommended for Endorsement	• Total Votes-18; Yes-18; No-0	• The committee passed the measure on its overall suitability for endorsement.

Table A.1-1.7. Public and Member Comment

Supportive/Non-supportive Comments	Number of Comments Received	Comment Summary
Supportive comments	• None	N/A
Non-supportive comments	• None	N/A

CONSENSUS STANDARDS APPROVAL COMMITTEE (CSAC) EVALUATION

Table A.1-1.8. CSAC Endorsement Decision

CSAC Endorsement Decision	Total Votes	Rationale
Endorsed	• Total Votes-13; Yes-13; No-0	• Unanimous approval to endorse the measure via a consent calendar.

APPEALS BOARD EVALUATION

Table A.1-1.9. Appeals

Appeal Received (Yes/No)	Appellant Organization	Summary of Appeal and Its Review
No	• N/A	• N/A

A.2 Measures Returned for Reconsideration by the CSAC

CBE #3474 Hospital-Level, Risk-Standardized Payment Associated With a 90-Day Episode of Care for Elective Primary Total Hip and/or Total Knee Arthroplasty [THA/TKA] (Yale CORE/CMS)

Staff Assessment | Specifications

Description: This measure estimates hospital-level, risk-standardized payments for an elective primary total THA/TKA episode of care, starting with an inpatient admission to a short-term acute care facility and extending 90 days post admission for Medicare fee-for-service (FFS) patients who are 65 years of age or older.

Adjustment/Stratification: Statistical risk model

Resource Use Measure Type: Per Episode

Level of Analysis: Facility

Costing Approach: Standardized Pricing [Risk standardized pricing (RSP)]

Type of Measure: Cost and Resource

Data Source: Claims

Measure Steward: Centers for Medicare & Medicaid Services

STANDING COMMITTEE EVALUATION

Table A.2-1.1. Importance to Measure and Report (MUST PASS)

Criterion	Total Votes	Rationale

1a. High Impact and 1b. Opportunity for Improvement	• Total Votes-17; H-6; M-10; L-1; I-0 (16/17 – 94.1%, Pass)	• The committee recognized that this measure highlights the need to focus on high-value care as Medicare spending is underscored, resulting in a need for transparency of costs across providers.
		• The developer submitted performance data over a three-year period (April 2016 to March 2017, April 2017 to March 2018, and April 2018 to March 2019).
		  • Mean (SD): 21,907 (2,406); 20,957 (2,205); 20,314 (1,999)
		  • Range (min. – max.): 13,031 – 43,567; 15,748 – 38,555; 12,596 – 37,324
		  • 20th percentile: 19,888; 19,097; 18,715
		  • 50th percentile: 21,695; 20,725; 20,071
		  • 70th percentile: 22,838; 21,794; 21,079
		• The developer provided measure scores for the following social risk factors:
		  • Dual Eligibility: 50th percentile Range (Min-Max (19,968-21,525))
		  • Low AHRQ SES: 50th percentile Range (Min-Max (19,951-21,612))
		  • Race (Black patients): 50th percentile Range (Min-Max (19,989-21,409))

Criterion	Total Votes	Rationale
		• Rurality: 50th percentile Range (Min-Max (20,130-21,374)) • The committee expressed concerns about measure ambiguity and whether evidence of poor quality was presented. • The committee raised questions about factors leading to cost decrease, data on length of stay, and the standardized costing under MS-DRGs. • The developer mentioned various contributing factors, including patients with high complications in skilled nursing facilities (SNFs). • The developer further emphasized the aim of the measure in helping hospitals assess individual patient-level results and cost outliers. • Without any additional comments, the committee acknowledged that the measure is a high-resource area of health care and noted that variations in cost exist. • The committee therefore passed the measure on importance to measure and report.

Table A.2-1.2. Scientific Acceptability of Measure Properties (MUST PASS)

Criterion	Total Votes	Rationale

2a. Reliability	• Total Votes-17; H-6; M-8; L-2; I-1 (14/17 – 82.3%, Pass)	• The committee noted that that reliability testing was conducted at the accountable entity level:
		  • The developer tested reliability using split-sample analysis with three years of data that included 948,457 admissions.
		  ○ Admissions were randomly split into two halves, 475,086 admissions from 3,417 hospitals in one half and 473,371 admissions from 3,362 hospitals in the other half.
		  ○ Using the Spearman-Brown prediction formula, the agreement between the two independent assessments of the RSP for each hospital was 0.889.
		  • Signal-to-noise reliability testing with three years of performance data was conducted:
		  ○ Median [0.948], mean [0.915], standard deviation [0.084], minimum [0.37], 25 percentile [0.876], 75 percentile [0.977], and maximum [0.998].
		  • During the discussion of reliability, a public comment was submitted expressing concern about the minimum reliability result from the signal-to-noise testing, which was 0.37.
		  • Some committee members did not share this concern because the fifth percentile had a reliability of 0.74; therefore, the committee passed the measure on reliability.

2b. Validity	• Total Votes-17; H-0; M-8; L-7; I-2 (8/17 – 47.1%, Consensus Not Reached)	• The committee noted that the validity testing was conducted at the accountable entity level:
		  • The developer assessed the correlation between the measure and the hospital Medicare Spending per Beneficiary (MSPB) using an unweighted Pearson's correlation coefficient.
		  • The developer found the THA/TKA payment measure scores to be positively correlated (0.480) with MSPB measure scores.

Criterion	Total Votes	Rationale
	• Post-comment Validity Revote: Total Votes: 15; H-0; M-7; L-7; I-1 (7/15 – 47%, No Pass)	• The developer also conducted face validity (8 of 13 TEP members strongly, mostly, or somewhat agreed) and empiric validity (positive correlation; 0.480) to support the measure. • An internal consistency test was used to analyze the disposition of payments for the observed outcomes (i.e., inpatient and post-acute care), within quartiles of the provider RSP: ○ Total Numbers of Patients in Each RSP Quartile (Q1, Q2, Q3, Q4): 376,903; 266,416; 202,942; 102,196 ○ Total Observed Episode Payment Per Patient (in dollars): 18,835; 20,877; 22,640; 25,877. ○ Index Inpatient Payment/Patient (in dollars): 14,271; 14,362; 14,568; 14,930. ○ Index Inpatient Physician Payment/Patient (in dollars): 1,983; 2,041; 2,108; 2,089. ○ Patient with PAC (in percentages): 97.6; 98.9; 99.3; 99.3. ○ PAC Payment/Patient (in dollars): 4,580; 6,540; 8,097; 11,017. • A public comment submitted prior to the meeting expressed concern about whether lower cost is better and suggested including an analysis of costs compared to the quality of care delivered. The commenter also questioned the appropriateness of the absence of social determinants of health (SDOH) variables in the risk adjustment model. • During the committee measure evaluation meeting, prior to the transition of the E&M work to Battelle, NQF staff clarified that according to its measure evaluation criteria, cost measures do not have to be correlated to a quality indicator; instead, NQF requires the measure score to correctly reflect the cost of care or resources provided. • The developer also noted that no specific analysis of cost relationship between the first 30 days and 30 and 90 days was conducted. • Some committee members requested clarification on whether most of the cost variation occurred between the 30- and 90-day period, how facilities participating in both ACOs and FFS arrangements are accounted for in the measure, and whether the developer included dual eligibility (DE) in the risk adjustment model. • A committee member noted that the SDOH variables significantly impacted the measure score rankings, which they stated was unusual and may warrant adjustment. • The developer clarified that DE was removed from the risk adjustment model to align the model with a different endorsed measure, which does not adjust for DE and that if a hospital is receiving FFS payments, it is included in the measure. • Based on the concerns raised, the committee did not reach consensus on validity during the measure evaluation meeting. • During the post-comment meeting, the committee revoted on validity after review and discussion of the comments received, which were largely non-supportive of the measure due to similar concerns noted by the committee. The committee did not pass the measure on validity.

Table A.2-1.3. Feasibility

Criterion	Total Votes	Rationale
3. Feasibility	• Total Votes-18; H-13; M-4; L-1; I-0 (17/18 – 94.4%, Pass)	• Regarding feasibility, the committee acknowledged that there have been no reported difficulties regarding data collection. • The committee did not raise any concerns and passed the measure on feasibility.

Table A.2-1.4. Use and Usability (USE IS MUST PASS FOR MAINTENANCE MEASURES)

Criterion	Total Votes	Rationale
4a. Use	• Total Votes-19; Pass-18; No Pass-1 (18/19 – 94.7%, Pass)	• The committee acknowledged that the measure is publicly reported (2017 and 2018) and included in the HIQR payment determination for all the nation's non-federal short-term acute care hospitals and critical access hospitals. • The committee acknowledged that the latest publicly reported results included elective THA/TKA procedures from April 2014 to March 2017, with results accessible on the CMS Hospital Compare website. • The committee did not have any questions or concerns and passed the measure on use.
4b. Usability	• Total Votes-18; H-2; M-13; L-3; I-0 (15/18 – 83.3%, Pass)	• The committee discussed whether the measure could potentially promote cost-cutting behavior if a higher or lower score is perceived as better. • The developer emphasized that CMS refrains from using terms such as "better" and "worse" in reference to the measure results, although the data suggest that higher scores are not necessarily better. • The committee expressed concern about unintended consequences, which the developer noted occur at the physician level, while the measure is at the hospital level. • The committee did not have any additional questions or concerns and passed the measure on usability.

Table A.2-1.5. Related and Competing Measures

Criterion	Related and/or Competing Measure(s)	Rationale
5. Related and Competing	• CBE #1550 Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) • CBE #1551 Hospital-level 30-day risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)	• Measure was not recommended for endorsement; therefore, the related measures were not discussed.

Table A.2-1.6. Standing Committee Recommendation for Endorsement

Committee Endorsement Recommendation	Total Votes	Rationale
Not Recommended for Endorsement	Vote Not Taken	• The committee did not pass the measure on validity, a must-pass criterion. Therefore, the committee did not vote on the overall suitability for endorsement.

Table A.2-1.7. Public and Member Comment

Supportive/Non-supportive Comments	Number of Comments Received	Comment Summary

Supportive comments	• One	Pre-evaluation comments:
		• None
		
		Post-evaluation comments:
		• One comment was from the measure developer to support the post-comment discussions. The developer noted that adding the dual eligibility variable to the risk model has little impact on measure scores, and the proportion of dual eligible patients in the measure cohort is small.
		  • Mean changes in payments are less than $75 (or less than 0.3% of total payments).
		  • Measure scores calculated with and without dual eligibility are highly correlated (0.994).
		  • The mean hospital prevalence of the dual eligibility variable is 3.4%.
		• The developer also commented on the risk model validity, emphasizing that the measure's risk model performs similarly for dual eligible vs. non-dual eligible patients, as shown by risk-decile plots. New analyses provided in the submitted comment show that payments have declined for both dual and non-dual patients, but quality has improved for both groups of patients.
		• Lastly, the THA/TKA measure is used in a pay-for-reporting program, not a pay-for-performance program. Therefore, facilities are not penalized based on their performance on this measure. The THA/TKA payment measure is reported together with the THA/TKA Complications measure, which was endorsed by the Surgery standing committee without adjustment for dual eligibility.

Non-supportive comments	• Five	Pre-evaluation comments: • One comment submitted prior to the meeting noted a concern with the minimum reliability result from the signal-to-noise testing, which was 0.37. The comment suggested the standing committee consider whether the measure should require a higher case minimum to achieve a minimum threshold of 0.70 for reliability. • Another comment submitted prior to the meeting noted concerns of whether lower cost is better, whether the submission should have included an analysis of costs compared to the quality of care delivered, and whether the absence of social determinants of health variables in the risk adjustment model is appropriate. Post-evaluation comments: • One commenter noted that the measure is important although it does not seem timely or up to date and should have an accompanying joint replacement ambulatory measure. Also, DQMs (digital quality measures) and EQMs (electronic quality measures) are a CMS priority as well as

Supportive/Non-supportive Comments	Number of Comments Received	Comment Summary
		meaningful measures. The state of full caregiving/aftercare/full SNFs, LTAC (complex transitions) is such that patients too often languish in hospitals (not as mobile post-surgery as they should be) where muscle strength decreases and this needs to be addressed. Follow up is important to readmissions and having telehealth options for many of the follow up visits is an important option. • A second commenter shared that having the ability to possibly expect or predict and document somewhere when it might be more likely that someone might be readmitted to a hospital setting after major joint surgery is important. Individuals with multiple issues that might interfere with a successful 'easy' recovery after surgery might be noted in electronic health records. Also, there are many who are doing ambulatory major joint surgeries that do not fit into this measure. Might be reconsidered for validity considering the landscape today. • The third commenter agreed and did not support the measure and agreed with the committee's recommendation.

CONSENSUS STANDARDS APPROVAL COMMITTEE (CSAC) EVALUATION

Table A.2-1.8. CSAC Endorsement Decision

CSAC Endorsement Decision	Total Votes	Rationale
None - Return the measure back for reconsideration	• Total Votes-13; Uphold the standing committee's recommendation-6; Do not uphold the recommendation; instead, return the measure back to the standing committee-6; Abstain-1	• The CSAC voted to return the measure to the committee for reconsideration. • During the CSAC meeting, the CSAC raised concern with the committee discussions of cost associations with quality indicators, noting that this may have confounded the committee's decision, as this is not a requirement within the endorsement criteria. In addition, the CSAC agreed that the committee did not fully consider the data and rationale provided by the developer during post-comment, with respect to not including dual eligibility in the risk adjustment model. Therefore, the CSAC determined that CBE #3474 should be reconsidered. • Battelle staff summarized that since the All-Cause Admissions and Readmissions committee will not be convened for the Spring 2023 cycle, and will be retired at the end of 2023, this measure will be reviewed by the Cost and Efficiency committee under Battelle's new process. Battelle will work with the developer to have the measure reviewed under the Fall 2023 cycle. Until that time, the measure will maintain endorsement.

APPEALS BOARD EVALUATION

9. Appeals:

- Based on the prior consensus-based entity's process, since this measure was sent back for reconsideration, it is not eligible for an appeal.

Appendix B: All-Cause Admissions and Readmissions Standing Committee and Battelle Staff

ALL-CAUSE ADMISSIONS AND READMISSIONS STANDING COMMITTEE

Chloe Slocum, MD, MPH (Co-Chair)
Director of Health Policy for the Harvard Medical School Department of Physical Medicine and Rehabilitation and Associate Director of Quality for Spaulding Rehabilitation Network in Boston; Physician, Harvard Medical School

Amy O'Linn, DO, FHM, FACP (Co-Chair)
Physician Lead, Cleveland Clinic Enterprise Readmission Reduction

John Bulger, DO, MBA (*Inactive*)
Chief Medical Officer, Geisinger Health Plan, Chief Medical Officer for Population Health, Geisinger Health

Richard James Dom Dera, MD, FAAFP
Medical Director, Ohio Family Practice Centers and New Health Collaborative

Lisa Freeman
Executive Director, Connecticut Center for Patient Safety

Kellie Goodson, MS, CPXP
Chief Experience and Engagement Officer, ATW Health Solutions

Dinesh Kalra, MD (*Inactive*)
Director, Rush University

Michelle Lin, MD, MPH, MS
Assistant Professor, Attending Physician Emergency Medicine, Icahn School of Medicine at Mount Sinai

Dheeraj Mahajan, MD, MBA, MPH, FACP
CEO, Chicago Internal Medicine Practice and Research (CIMPAR, SC)

Jack Needleman, PhD, FAAN
Professor, University of California, Los Angeles School of Public Health

Sonya Pease, MD, MBA
Chief Quality, Safety, Patient Experience Officer, Cleveland Clinic

Gaither Pennington, RN, BSN (*Inactive*)
Product Owner, Bravado Health

Rebecca Perez, MSN, RN, CCM
Sr. Manager of Education and Strategic Partnerships, Case Management Society of America

Sheila Roman, MD, MPH
Independent Healthcare Consultant Associate Professor of Medicine, Part-Time, Johns Hopkins Medical Institutions

Teri Sholder, RN, BSN, MHA, CPHQ, CPC
Senior Vice President/Chief Quality Officer, BayCare Health System

Lalita Thompson, MSN, RN, CRRN
Baclofen Pump Program Coordinator, TIRR Memorial Hermann

Cristie Travis, MSHHA (*Inactive*)
Chief Executive Officer, Memphis Business Group on Health (MBGH)

Milli West, MBA, CPHQ
Quality System Director, Patient Experience, Intermountain Healthcare

CANCER STANDING COMMITTEE MEMBERS

Karen Fields, MD (Co-Chair)
Medical Director, Strategic Alliances, Moffitt Cancer Center

Shelley Fuld Nasso, MPP (Co-Chair)
CEO, National Coalition for Cancer Survivorship

Steven Chen, MD, MBA, FACS
Director of Surgical Oncology, OasisMD

David J. Sher, MD, MPH
Associate Professor, UT Southwestern Medical Center

COST AND EFFICIENCY STANDING COMMITTEE MEMBERS

Sunny Jhamnani, MD (Co-Chair)
Provider, Dignity Health

Kristine Martin Anderson, MBA (Co-Chair)
President, Civilian Sector, Booz Allen Hamilton

Matthew Titmuss, DPT
Assistant Vice President, Hospital for Special Surgery

BATTELLE STAFF

Nicole Brennan, MPH, DrPH
Executive Director

Brenna Rabel, MPH
Deputy Director

Matthew Pickering, PharmD
Principal Quality Measure Scientist

Quintella Bester, PMP
Senior Program Manager

Lydia Stewart-Artz, PhD
Social Scientist III

Isaac Sakyi, MSGH
Social Scientist III

Jessica Ortiz, MA
Social Scientist II

Elena Hughes, MS
Social Scientist I

Rajbir Kaur, MPH
Social Scientist I


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