Testing Updates for Wave 3 of Measure Development

MACRA Episode-Based Cost Measures

March 2021

The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen, LLC, to develop episode-based cost measures for use in the Merit-based Incentive Payment System (MIPS) to meet the requirements of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Acumen has convened clinician expert panels to provide input on the development of 5 episode-based cost measures since mid-2019:

- Asthma/Chronic Obstructive Pulmonary Disease (COPD)
- Diabetes
- Colon and Rectal Resection
- Melanoma Resection
- Sepsis

The measures were field tested in August-September 2020. During this time, Acumen produced over 200,000 field test reports for clinicians and clinician groups on the Quality Payment Program website and posted draft measure specifications and testing results on the MACRA Feedback Page.[1] This document provides further empirical validity testing results which can be reviewed alongside other measure information.

1. Correlation with Quality Measures

A cost measure is intended to evaluate health service utilization for a population or event (National Quality Forum [NQF] 2017), taking into account risk factors. When viewed with an aligned quality measure, a cost measure can be used to assess value, defined as the desired health outcomes that can be achieved for a given cost (Porter, 2010). Currently there are only 20 cost measures compared with over 200 quality measures in MIPS.

We evaluated the relationship between cost measures and related MIPS quality measures, with the following key points for interpreting the strength and direction of results:

- A strong inverse correlation – good performance on cost with poor quality performance – would indicate that variation in cost is solely reflective of variation in quality. This suggests that care stinting would be a concern. We do not see this for any of the cost and quality measure correlations in our testing.
- A weak correlation between cost and quality in either a positive or negative direction indicates variation in cost at any given level of quality. This suggests that cost performance can be improved without negatively impacting quality. This is the result that we see for all the cost and quality measure correlations in our testing, with all statistically significant correlations of MIPS cost and quality measures being positive.
- Positive correlations with quality measures indicate that clinicians providing better quality care on that particular metric tend to also have lower costs. That is, clinicians who have high rates of performing specific quality actions (as measured through process measures) or achieve better patient health outcomes (as measured through outcomes

[1] CMS, MACRA Feedback Page, https://www.cms.gov/Medicare/Quality-Payment-Program/Quality-Payment-Program/Give-Feedback

measures) tend to have lower costs of care. As such, these associations could represent ways to lower costs while also providing high-quality care.

- A negative correlation between a cost and quality measure does not indicate an absence of cost improvement potential consistent with high-value care. This is because other approaches to improving cost performance (e.g., patient education) may not be captured by the selected quality measure. Given this, another way of identifying areas where service utilization could be modified to improve costly outcomes (e.g., readmissions for complications) is to examine whether substantial variation exists in episode costs, adjusting for patient and disease characteristics.

Across all correlation results, one must consider the conceptual relationship between measures and data limitations before interpreting the results. First, the interpretation of correlations depends on the types of measures and the degree of overlap between their patient cohorts. A quality measure that focuses on patient outcomes, when paired with a cost measure for a similar patient cohort, may be more informative to the question of value than a cross-cutting process measure that applies to a wide array of patient conditions. For the most meaningful assessment of value, measures should apply to the same care provided for the same patient cohort over the same time horizon. This is not always the case; for instance, MIPS Q398 for Optimal Asthma Control only applies to patients aged from 5 to 50, while the cost measure applies to the Medicare population, predominantly those over the age of 65.

Second, there are data limitations to the quality measure category when considering how quality measures can link with cost. Clinicians select only 6 MIPS quality measures to report with a 60% data completeness requirement for our study period of calendar year (CY) 2019; it has since increased to 70%. In choosing which measures to report, clinicians are generally required to report only one outcome or high-priority measure. This selective reporting likely biases the observed sample.

Below is a table showing correlations between the episode-based cost measures and related quality measures. We used the CY 2019 study period and a testing volume threshold of 20 episodes for the chronic condition and acute inpatient medical condition measures, and 10 episodes for procedural measures. For interpretability of results, we converted the direction of all non-inverse quality measures such that a lower score indicates better performance for all cost and quality measures in this analysis. We limited to results where there are at least 40 clinician groups (identified by Taxpayer Identification Number, or TIN) or clinicians (identified by unique TIN and National Provider Identifier combination, or TIN-NPI) with both the cost and quality measure; in some cases, this means we only show the measures at the TIN-NPI level. In general, and across all statistically significant results, there are slightly positive correlations, suggesting that cost performance can be improved without negatively impacting quality.

Table 1. Correlation between Cost Measures and Related MIPS Quality Measures

Cost Measure (Type), # Providers	Related Quality Measure (Type)	TIN or TIN-NPI	# of Pairs	Pearson Correlation	P-Value
Asthma/COPD (Chronic Condition) TINs: 20,893 TIN-NPIs: 39,170	Q051 COPD: Spirometry Evaluation (Process)*	TIN	187	0.116	0.114
		TIN-NPI	724	0.123	0.001^
	Q052 COPD: Long-Acting Inhaled Bronchodilator Therapy (Process)	TIN	60	0.021	0.873
		TIN-NPI	299	0.172	0.003
	Q398 Optimal Asthma Control (Outcome)	TIN	42	0.048	0.763
		TIN-NPI	159	0.020	0.802
	Q458 All-cause Hospital Readmission (Outcome)**	TIN	717	0.110	0.003^
Diabetes (Chronic Condition) TINs: 38,813 TIN-NPIs: 99,134	Q001 Diabetes: Hemoglobin A1c (HbA1c) Poor Control (>9%) (Intermediate Outcome)	TIN	2,351	0.245	0.000^
		TIN-NPI	12,315	0.163	0.000^
	Q119 Diabetes: Medical Attention for Nephropathy (Process)	TIN	943	0.125	0.000^
		TIN-NPI	6,337	0.062	0.000^
	Q126 Diabetes Mellitus: Diabetes Foot & Ankle Care, Peripheral Neuropathy – Neurological Evaluation (Process)	TIN	103	0.137	0.168
		TIN-NPI	764	0.045	0.214
	Q458 All-cause Hospital Readmission (Outcome)**	TIN	726	0.183	0.000^
Colon and Rectal Resection (Procedural) TINs: 1,398 TIN-NPIs: 1,921	Q354 Anastomotic Leak Intervention (Outcome)	TIN-NPI	49	-0.031	0.833
	Q355 Unplanned Reoperation within 30-day Postoperative Period (Outcome)	TIN-NPI	62	0.191	0.137
	Q356 Unplanned Hospital Readmission within 30 Days of Principal Procedure (Outcome)	TIN-NPI	64	0.047	0.712
	Q357 Surgical Site Infection (Outcome)	TIN-NPI	61	0.194	0.134
Melanoma Resection (Procedural) TINs: 1,799 TIN-NPIs: 2,186	Q137 Melanoma: Continuity of Care - Recall System (Process)	TIN	223	0.041	0.542
		TIN-NPI	505	0.020	0.654
	Q397 Melanoma Reporting (Process)	TIN-NPI	56	0.047	0.731
	Q265 Biopsy Follow Up (Process)	TIN	146	0.115	0.167
		TIN-NPI	350	0.011	0.838
Sepsis (Acute Condition) TINs: 4,143 TIN-NPIs: 22,949	Q407 Appropriate Treatment of MSSA Bacteremia (Process)*	TIN	67	-0.003	0.981
		TIN-NPI	464	0.051	0.273
	QACQR13 Sepsis: Hour One Bundle (QCDR process measure)	TIN-NPI	72	0.329	0.005^
	Q458 All-cause Hospital Readmission (Outcome)**	TIN	481	0.096	0.035^

*Removed from MIPS CY 2020 onwards
**Replaced from MIPS CY 2021 onwards with a re-specified version: Q479 Hospital-Wide, 30-Day, All-Cause Unplanned Readmission (HWR) Rate for MIPS Groups
^P-value <0.05 indicates statistical significance

2. Relationship between Episode-Specific Care and Global Costs of Care

We tested the correlation between the episode-based cost measures and NQF #3575 Total Per Capita Cost (TPCC), a population-based measure in MIPS that includes all costs for a patient.[2] Table 3 shows a moderately positive correlation, using a 20-patient case minimum for TPCC. This indicates:

[2] National Quality Forum, Total Per Capita Cost (TPCC) Measure, Endorsed in November 2020. https://www.qualityforum.org/QPS/3575

- Clinicians who have lower costs for the specific care of asthma/COPD and diabetes tend to also have lower overall global costs.
- There is no redundancy between NQF #3575 and the episode-based cost measures. For example, a correlation of 1 would indicate that both measures are measuring the same care, suggesting that they are duplicative. Episode-based measures are required by statute to be used in MIPS, and have been developed de novo for this purpose. Stakeholders have also requested more clinically refined measures alongside the global cost measures.

Table 2. Correlation between TPCC Measure and Chronic Condition Measures

Cost Measure (Type), # Providers	Episode-Based Cost Measure (Type)	TIN or TIN-NPI	# of Pairs	Pearson Correlation	P-Value
TPCC (Global) TINs: 71,938 TIN-NPIs: 345,029	Asthma/COPD (Chronic Condition)	TIN	20,110	0.301	0.00^
		TIN-NPI	35,822	0.258	0.00^
	Diabetes (Chronic Condition)	TIN	32,726	0.328	0.00^
		TIN-NPI	82,477	0.241	0.00^

^P-value <0.05 indicates statistical significance