

**Report to the Commission:
Performance Work Group Report on Efficiency and Cost
Measures**

**Health Services Cost Review Commission
4160 Patterson Avenue Baltimore, MD 21215
(410) 764-2605
July 9, 2014**

INTRODUCTION

The charge of Performance Measurement Workgroup is to make recommendations on what specific measures of cost, care and health should be considered for adoption, retention or development in order to evaluate and incentivize performance improvements under the population-based All-Payer Model. This measurement and payment approach also relates to the policy objectives of establishing payment levels that are reasonably related to the cost of providing services on an efficient basis in accordance with the value concepts embodied in the new All-Payer Model. The Performance Measurement Workgroup participated in discussions of the overall context of developing efficiency measurement options as well as presentations of specific examples of efficiency measures. While much of the content touched upon in the Workgroup meetings is included in the subsections of the report that follow, the Performance Measurement Workgroup members agreed that first an overall strategy must be developed that articulates the principles or criteria and stakeholders or users for guiding measure implementation.

This report summarizes the work to date in this area, including strategy considerations, discussions, presentations and measurement options to move forward for the efficiency measurement domain.

EFFICIENCY MEASUREMENT STRATEGY CONSIDERATIONS

Regarding the efficiency measurement strategy, Figure 1 below illustrates the key principles and stakeholders proposed by the Workgroup that must be addressed in measure selection and implementation.

Figure 1. Efficiency Measurement Proposed Principles and Stakeholders

Principles/criteria to guide measure domains to be implemented:
❖ Accountability
➤ Payment
➤ Public reporting
➤ Program monitoring and evaluation
❖ Improvement
❖ Alignment with Model targets and monitoring commitments
Stakeholders
❖ Policymakers – CMS, HSCRC (commission, staff), MHCC, DHMH
❖ Providers – hospitals, physicians, others
❖ Payers/purchasers – health plans, employers?
❖ Patients – consumers

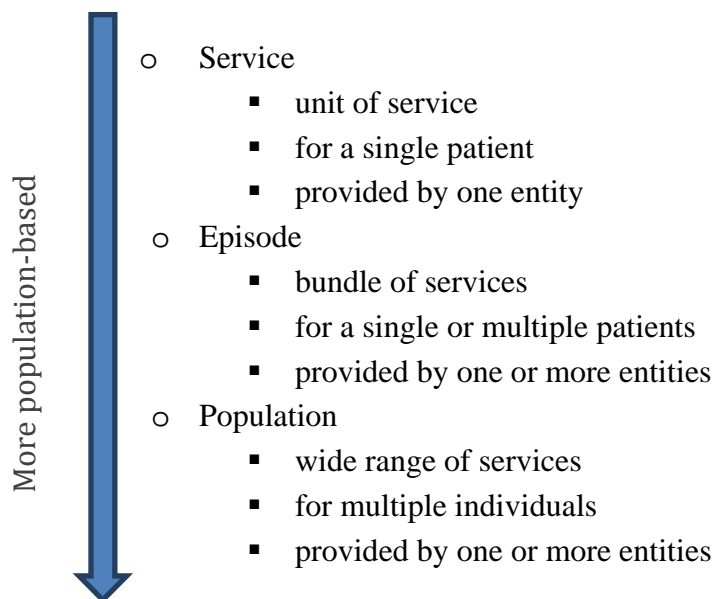
The CMS Measures Blueprint 10.1 identifies several criteria for measurement selection that overlap with those identified by the Performance Measurement Workgroup and offer additional criteria that should be considered when developing and implementing new efficiency measures.

- ◆ Measure is responsive to specific program goals and statutory requirements.

- ◆ Measure addresses an important condition or topic with a performance gap and has a strong scientific evidence base to demonstrate that the measure when implemented can lead to the desired outcomes and more affordable care (i.e., NQF's Importance criteria).
- ◆ Measure addresses one or more of the six National Quality Strategy (NQS) priorities.¹
- ◆ Measure selection promotes alignment with CMS program attributes.
- ◆ Measure reporting is feasible and measures have been fully developed and tested.
- ◆ Measure results and performance should identify opportunities for improvement.
- ◆ Potential use of the measure in a program does not result in negative unintended consequences like reduced lengths of stay, overuse or inappropriate use of treatment, and limiting access to care.

Maryland's near term efficiency measurement and payment approach must focus on the policy objectives to establish payment levels that are reasonably related to the cost of providing services on an efficient basis in accordance with the value concepts embodied in, and requirements of, the new All-Payer Model. From both the policy and hospital providers' perspectives, it is vital that Maryland meets the cost reduction targets set forth in the New All-payer Model contract with CMMI, so measures that track or incentivize cost reduction are important to consider for the nearer term, with an anticipated implementation timeframe of 2015. Among the possible measures for this purpose are the Potentially Avoidable Utilization measures and an updated measure based upon the measure developed by Reasonableness of Charges /Inter-hospital Cost Comparison methodology used previously by HSCRC.

A set of efficiency measurement tools must also be fine-tuned to assess the fairness rates set for hospitals in their global budgets, and they should address accountability at multiple levels, as illustrated below.



Examples of measures that may be used for benchmarking and trending Maryland efficiency that

¹ <http://www.ahrq.gov/workingforquality/about.htm>

should be considered earlier for development include:

- A Maryland resident per member per month cost measure, and
- Maryland allowed to Medicare allowed ratios, both for state internal comparisons and national benchmark comparisons.

Measures such as these would likely be first monitored and then used for accountability, with results targeted for providers and policymakers.

Further work of an efficiency measurement sub-group to be established in July 2014 will be to consider the audience(s) of the measures staged over time for the various accountability and transparency purposes and levels. For example, the group needs to consider Maryland's recent grade of F for pricing transparency and the timing and staging of public reporting of pricing data for the consumer audience.

A phased approach to measuring efficiency could begin with measuring cost and appropriateness, with reporting of measures of cost and clinical quality outcomes side-by-side. The next phase could progress to using measures of efficiency that roll-up cost and clinical quality, or actually measure efficiency as a valid and reliable composite measure. It is also important to recognize that other types of quality measures, such as readmissions and complications/adverse events, also have implications for cost, and thereby, efficiency.

EFFICIENCY MEASUREMENT

Definition of Efficiency and Value

Efficiency measurement is a complex topic. One reason for the complexity is that people use different terminology and definitions to describe efficiency. National organizations such as the Agency for Healthcare Research and Quality (AHRQ), the National Quality Forum (NQF), and the Ambulatory Quality Alliance (AQA) have undertaken efforts to define efficiency. The general agreement among these efforts is that efficiency is a function of quality and cost, such that $\text{efficiency} = \text{quality}/\text{cost}$. In that way, efficiency can be maximized by increasing quality, decreasing costs, or both; but cheaper is not necessarily more efficient. It follows that to measure efficiency, both quality and cost components are necessary.

The terms *value* and *affordability* are subjective assessments of efficiency. They depend on stakeholder perspectives and preferences; that is, the cost to whom and the quality they receive. For example, consumers want the best quality care, but they are sensitive to out-of-pocket costs. A policymaker, such as CMS, which is both a purchaser and payer, wants to maximize health and health care outcomes per unit cost. Hospitals strive for operational efficiency to maximize their operating margins, but they also need to consider appropriateness, such as the need for a CT scan after head trauma.

In thinking about whom or what is measured in assessing efficiency, there is a continuum from less to more population-based. Efficiency can be measured at the service level for one entity, or for episodes of care for a bundle of services, or through population-based measurement by examining a wide range of services provided by one or more entities.

As previously mentioned, there is both a cost component and a quality component to measuring efficiency and there are different inputs for each component. For example, with regard to cost, there are different types of measures (e.g., utilization, condition, total cost), price implications, and time periods. There are also multiple dimensions to consider for quality measurement, such as clinical effectiveness, safety, and patient experience.

Key Efficiency Measurement Components and Potential Sub-Domains

Once the different components of cost and quality measures have been defined for a particular measurement need, a determination must be made regarding how the components will be linked to measure efficiency. Generally, more precision requires a more complex measurement algorithm. Options for linking cost and quality measures to assess efficiency include side-by-side display (aggregate or condition-specific), indexing, roll-up scoring with weighting, and a composite measure.

Another way to assess efficiency is to measure inefficiency, including areas such as waste (e.g., appropriateness, overuse), safety (e.g., harm, complications), care coordination (e.g., readmissions, duplicate tests), patient engagement (e.g., misalignment with preferences), population health (e.g., missed prevention or patient education opportunities), and operational (e.g., throughput, staffing, workforce injuries).

Appendix A of this document provides the results of an initial measure scan for efficiency measures. Examples of these measures listed with their associated measure category include:

- Cost/resource use
 - Utilization – counts of services
 - Casemix-Adjusted Inpatient Hospital Average Length of Stay, for medical and surgical admissions (United Health Group)
 - Intensive Care Unit Length of Stay, observed and risk-adjusted (Lee Institute)
- Condition- or procedure-specific cost/resource use
 - Episode Treatment Groups, e.g., hip/knee, pneumonia (Optum)
 - CMS draft resource use measures
- Total cost/resource use – individual or population
 - Payment-Standardized Medicare Spending per Beneficiary (CMS)
 - Total Cost of Care/Resource Use Population-Based PMPM Index (HealthPartners)
- Appropriateness/Overuse
 - Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury (Partners HealthCare)
 - Back Pain series, e.g., surgical timing, imaging (NCQA)
 - Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery (CMS)
 - Cardiac Stress Imaging: Routine Testing After Percutaneous Coronary Intervention (ACC)
 - Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients (AMA-PCPI)
 - Cesarean Section, nulliparous women with term, singleton baby in a vertex position (TJC)

Some specific examples of how cost and quality are being linked together include:

- Displaying results as an index
 - The NCQA Relative Resource Use (RRU) measures provide total annual resource use results for diabetes, asthma, COPD, cardiovascular conditions, hypertension, and low back pain, which are reported as an indexed observed-to-expected ratio for a plan's population. The RRU index and quality index are then linked together.
- Roll-up with weighting
 - CMS (FY 2015) combines together results from clinical process of care (20%), patient experience of care (30%), outcomes (30%) and efficiency (20%) to provide a total performance score.
 - Leapfrog Hospital Recognition Program combines the hospital's quality score (65%) with their resource use score (35%) to generate an overall value score.

HSCRC Approach to Efficiency Measurement

Reasonableness of Charges (ROC)

As stated previously, historically the HSCRC has included some form of efficiency measure in its arsenal of tools used to set Maryland hospital rates. Most recently, the Reasonableness of Charges (ROC) was the HSCRC's tool for measuring efficiency, which assessed the adequacy of each hospital's charges on a per case basis relative to their peer institutions in the state. This is accomplished by placing hospitals into peer groups and comparing the ROC after adjusting for a number of legitimate factors that account for differences in costs faced by each hospital.

The factors that need to be adjusted for, before comparing hospitals within a peer group, include the following:

- Mark-up – Commission approved markups over costs that largely reflect uncompensated care built into each hospital's rate structure.
- Direct Medical Education, Nurse Education, and Trauma – Adjustments that remove part of the costs of residents' salaries and some of the incremental costs of providing trauma services for hospitals with trauma centers.
- Labor Market Adjustor– an index that reflects differences in labor costs that are outside a hospital's control.
- Case Mix – Adjustment accounts for differences in average patient acuity across hospitals.
- Indirect Medical Education- Adjustment for inefficiencies and unmeasured patient acuity associated with teaching programs.
- Disproportionate Share – Adjustment for differences in hospital costs for treating relatively high number of poor and elderly patients
- Capital – Costs for a hospital are partially recognized– for each hospital, the ROC recognizes 50 percent of its actual capital costs and 50 percent of the peer group's costs.

After these adjustments the HSCRC uses the ROC to determine rate actions when hospitals are relatively high compared to their peers. If a hospital is more than 3 percent above its peer group average, the HSCRC will enter into discussions with the hospital to reduce its rates. The target is usually to reduce rates to the peer group average on a per case basis.

Maryland Resident Per Member Per Month Costs

As the hospital payment system moves towards global payments, there is a need to align the efficiency measures with population based metrics. Currently the HSCRC staff is working to calculate costs per Maryland resident similar to PMPM measures. In addition to determination of what adjustments should be made to hospital charges such as what HSCRC included in ROC calculations, defining the denominator for each hospital and adding additional adjustments to reflect the health status of this defined population will be critical in comparing cost per resident across hospitals. In addition, the HSCRC needs to expand the cost definitions from hospital services to include all other health care provision and secure timely access to Medicare, Medicaid and private claims data to measure total cost.

The formula for calculating PMPM costs is as follows:

$$\text{PMPM Costs} = \text{Adjusted Total Revenue for Maryland Residents} / \text{Total Maryland Population}$$

As with the ROC analysis, the PMPM costs for hospitals will be adjusted so that the legitimate factors that result in costs differences between hospitals are removed.

Potentially Avoidable Utilization (PAU)

While more comprehensive PMPM measures are being developed, the Performance Measurement Workgroup also has had various discussions on defining potentially avoidable utilization, which represents immediate opportunities to focus under the new All-payer Model. The definition of potentially avoidable utilization is as follows:

“Hospital care that is unplanned and can be prevented through improved care coordination, effective primary care and improved population health”.

The HSCRC work to date has focused on existing measures that are used widely in the public domain where the potentially avoidable cost of care can be attributed, and include the following:

- Rehospitalization
 - Inpatient- All Hospital, All Cause 30 Day Readmissions using CMS methodology with adjustment for planned admissions
 - ED – any visit within 30 days of an inpatient admission
 - Observation- any observation within 30 days of an inpatient admission
- Potentially Avoidable Admissions/Visits
 - Inpatient- Agency for Health Care Quality (AHRQ) Prevention Quality Indicators (PQIs) eke. Ambulatory care sensitive admissions

- Hospital Acquired Conditions as measured by Potentially Preventable Complications (PPCs)

As the list illustrates, these measures are also used for quality of care measurement and provide good examples of the intersection between better quality and reduced costs. The Performance Measurement Workgroup identified the lack of ambulatory care measures and this should be further explored by the efficiency measures sub-group that will be convened.

CONCLUSION

Ensuring efficient hospital costs have been one of the central missions of the HSCRC and the new All-payer Model will require developing and redefining the efficiency measures that can be used to evaluate hospital performance in the state. As the system is moving toward population-based approaches and in a transitional period, phasing should begin by focusing on the obvious opportunities to meet model targets.

Potentially avoidable utilization cost measures are currently used as one of the many data points for constructing global budgets, and are monitored as they represent a clear relationship between improved quality of care and reduced cost. In addition, they are highly prevalent in Medicare population and a focused approach to reduce PAUs in this population will ensure the saving targets for Medicare are met. Discussions are underway in the Payment Workgroup on how to incorporate performance on PAUs into some of the payment policies.

HSCRC staff will work in the near term to adjust and adapt the former ROC ICC methodology to and begin monitoring performance. Adjustments or additional ROC calculation steps may be needed to account for a shift from case-based measurement to episode- and population-based measurement.

Staff will also work to develop and adopt a resident per member per month methodology that encompasses defined hospital populations with a goal to use them for payment adjustments for FY 2016 at the earliest; at first, it is anticipated that the efficiency measurement will include inpatient and outpatient services costs, and then expand to the full range of services provided or the total cost of care. Staff will consider other options to combine the cost measures with quality measures in order to construct a full picture of efficiency.

Going forward, the Commission and external performance measurement stakeholders should additionally monitor activities related to efficiency measurement that other prominent groups are undertaking, such as CMS' implementation of the Hospital Value-Based Purchasing and Physician Value-Based Payment Modifier programs; NQF's initiatives in endorsement of cost and resource use measures and episode grouper evaluation criteria, linking cost and clinical quality, and the MAP Affordability Family of Measures; and the Choosing Wisely initiative which focuses on appropriate care choices by physicians and patients.

Appendix A

EFFICIENCY-RELATED MEASURES

Initial Scan

COST AND RESOURCE USE MEASURES

Row #	Steward	NQF #	Title	Description	Notes
UTILIZATION					
1	United Health Group	0328	Casemix-Adjusted Inpatient Hospital Average Length of Stay	This measure calculates a casemix-adjusted inpatient average length of stay (ALOS) for medical and surgical admissions for Commercial and Medicare populations. The measure can be reported at the hospital level or the service category level (medical vs. surgical).	
2	Philip R. Lee Institute for Health Policy Studies	0702	Intensive Care Unit (ICU) Length-of-Stay (LOS)	For all patients admitted to the ICU, total duration of time spent in the ICU until time of discharge; both observed and risk-adjusted LOS reported with the predicted LOS measured using the Intensive Care Outcomes Model - Length-of-Stay (ICOMLOS).	
3	AHRQ	0340	Pediatric Heart Surgery Volume (PDI 7)	Number of discharges with procedure for pediatric heart surgery	
4	Virtual PICU Systems, LLC	0334	PICU Severity-adjusted Length of Stay	The number of days between PICU admission and PICU discharge.	
5	Premier, Inc.	0327	Risk-Adjusted Average Length of Inpatient Hospital Stay	Percentage of inpatient & outpatients with excessive in-hospital days	
6	Leapfrog Group	0331 (though no longer endorsed)	Severity-Standardized Average Length of Stay -- Routine Care (risk adjusted)	Standardized average length of hospital stay (ALOS) for routine inpatient care (i.e., care provided outside of intensive care	

Row #	Steward	NQF #	Title	Description	Notes
				units).	
7	The Society of Thoracic Surgeons	0732	Surgical Volume for Pediatric and Congenital Heart Surgery: Total Programmatic Volume and Programmatic Volume Stratified by the Five STS-EACTS Mortality Categories	Surgical volume for pediatric and congenital heart surgery: total programmatic volume and programmatic volume stratified by the five STS-EACTS Mortality Levels, a multi-institutional validated complexity stratification tool	
CONDITION- OR PROCEDURE-SPECIFIC					
8		1560	Relative Resource Use (RRU) for People with Asthma	The risk-adjusted relative resource use by patients with asthma during the measurement year.	NCQA computes a relative resource use index and a quality index (derived from the NCQA quality measures for each specific condition) to allow for comparison of plans on both resource use and quality at the same time. The RRU measures are population based measures that are used to compare health plans or ACOs on resources used to care for beneficiaries with six conditions. Published tables allow organizations to match severity-adjusted resource use within service categories
9		1557	Relative Resource Use for People with Diabetes	The risk-adjusted relative resource use by patients with diabetes (type 1 and type 2) during the measurement year.	
10		1558	Relative Resource Use for People with Cardiovascular Conditions	The risk-adjusted relative resource use by patients with specific cardiovascular conditions during the measurement year.	
11		1561	Relative Resource Use for People with Chronic Obstructive Pulmonary Disease	The risk-adjusted relative resource use by patients with COPD during the measurement year.	
12			Relative Resource Use for People with Hypertension	The risk-adjusted relative resource use by patients with hypertension during the measurement year.	
13			Relative Resource Use for People with Low Back Pain	The risk-adjusted relative resource use by patients with low back pain during the measurement year.	

Row #	Steward	NQF #	Title	Description	Notes
					(Inpatient Facility, Surgery and Procedure, Evaluation and Management (E&M), and Pharmacy) to a standardized allowed payment in order to calculate total standard costs for their eligible members across different areas of clinical care.
14	Optum	1609	ETG Based HIP/KNEE REPLACEMENT cost of care measure	The measure focuses on resources used to deliver episodes of care for patients who have undergone a Hip/Knee Replacement. Hip Replacement and Knee Replacement episodes are initially defined using the Episode Treatment Groups (ETG) methodology and presence describe the unique of the condition for a patient and the services involved in diagnosing, managing and treating the condition.	This measure is a per episode evaluation. A number of resource use measures are defined for Hip/Knee Replacement episodes, including overall cost of care, cost of care by type of service, and the utilization of specific types of services.
15	Optum	1611	ETG Based PNEUMONIA cost of care measure	The measure focuses on resources used to deliver episodes of care for patients with pneumonia. Pneumonia episodes are defined using the Episode Treatment Groups (ETG) methodology and describe the unique presence of the condition for a patient and the services involved in diagnosing, managing and treating pneumonia.	A number of resource use measures are defined for pneumonia episodes, including overall cost of care, cost of care by type of service, and the utilization of specific types of services. Each resource use

Row #	Steward	NQF #	Title	Description	Notes
					measure is expressed as a cost or a utilization count per episode and comparisons with internal and external benchmarks are made using risk adjustment to support valid comparisons.
16	CMS	N/A Not endorsed	Condition-specific per capita cost measures for COPD, diabetes, HF, and CAD	The ratio of all actual Medicare FFS Parts A and B payments to a physician or medical group for beneficiaries attributed to them over a calendar year with one of four specific chronic health conditions— diabetes, coronary artery disease, chronic obstructive pulmonary disease, and heart failure— to all expected payments to the physician or medical group for those beneficiaries, multiplied by the payment for the average beneficiary in the sample.	
17	CMS	N/A not endorsed	Draft: Ischemic Heart Disease Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
18	CMS	N/A not endorsed	Draft: Acute Myocardial Infarction Condition Phase Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
19	CMS	N/A not endorsed	Draft: Coronary Artery Bypass Graft Treatment Episode for CMS Episode	Draft: Resources used in caring for the condition (duration TBD)	

Row #	Steward	NQF #	Title	Description	Notes
			Groupers		
20	CMS	N/A not endorsed	Draft: Heart Catheterization Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
21	CMS	N/A not endorsed	Draft: Percutaneous Coronary Intervention Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
22	CMS	N/A not endorsed	Draft: Hip Osteoarthritis Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
23	CMS	N/A not endorsed	Draft: Hip Replacement/Revision Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
24	CMS	N/A not endorsed	Draft: Hip/Femur Fracture Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
25	CMS	N/A not endorsed	Draft: Hip/Femur Fracture Repair Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
26	CMS	N/A not endorsed	Draft: Knee Osteoarthritis Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
27	CMS	N/A not endorsed	Draft: Knee Replacement/Revision Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
28	CMS	N/A not endorsed	Draft: Shoulder Osteoarthritis Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	

Row #	Steward	NQF #	Title	Description	Notes
29	CMS	N/A not endorsed	Draft: Shoulder Replacement/Repair Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
30	CMS	N/A not endorsed	Draft: Asthma Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
31	CMS	N/A not endorsed	Draft: Bronchiectasis Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
32	CMS	N/A not endorsed	Draft: Chronic Bronchitis/Emphysema Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
33	CMS	N/A not endorsed	Draft: Cataract Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
34	CMS	N/A not endorsed	Draft: Cataract Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
35	CMS	N/A not endorsed	Draft: Glaucoma Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
36	CMS	N/A not endorsed	Draft: Glaucoma Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
37	CMS	N/A not endorsed	Draft: Retinal Disease Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
38	CMS	N/A not endorsed	Draft: Retinal Disease Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
39	CMS	N/A not endorsed	Draft: Heart Failure Condition Episode for CMS Episode	Draft: Resources used in caring for the condition (duration TBD)	

Row #	Steward	NQF #	Title	Description	Notes
			Groupers		
40	CMS	N/A not endorsed	Draft: Cardiac Arrhythmia Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
41	CMS	N/A not endorsed	Draft: Heart Block Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
42	CMS	N/A not endorsed	Draft: Cardioversion Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
43	CMS	N/A not endorsed	Draft: Pacemaker/AICD Implantation Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
44	CMS	N/A not endorsed	Draft: Pneumonia Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
45	CMS	N/A not endorsed	Draft: Respiratory Failure Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
46	CMS	N/A not endorsed	Draft: Hypertension Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
47	CMS	N/A not endorsed	Draft: Shock/Hypotension Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
48	CMS	N/A not endorsed	Draft: Nephropathy/Renal Failure Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
49	CMS	N/A not endorsed	Draft: Diabetes Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	

Row #	Steward	NQF #	Title	Description	Notes
50	CMS	N/A not endorsed	Draft: Sepsis/SIRS Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
51	CMS	N/A not endorsed	Draft: Ischemic Cerebral Artery Disease Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
52	CMS	N/A not endorsed	Draft: Carotid Artery Stenosis Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
53	CMS	N/A not endorsed	Draft: Breast Cancer Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
54	CMS	N/A not endorsed	Draft: Breast Cancer Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
55	CMS	N/A not endorsed	Draft: Lung Cancer Condition Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
56	CMS	N/A not endorsed	Draft: Lung Cancer Treatment Episode for CMS Episode Grouper	Draft: Resources used in caring for the condition (duration TBD)	
57	CMS	N/A not endorsed	Draft: Prostate Cancer Treatment Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	
58	CMS	N/A not endorsed	Draft: Prostate Cancer Condition Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	
59	CMS	N/A not endorsed	Draft: Colon Cancer Condition Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	
60	CMS	N/A not endorsed	Draft: Colon Cancer Treatment Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	

Row #	Steward	NQF #	Title	Description	Notes
61	CMS	N/A not endorsed	Draft: Dementia Condition Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	
62	CMS	N/A not endorsed	Draft: Back Pain Condition Episode for CMS Episode Grouper	Draft: Resources used in the episodes attributed to the provider	
TOTAL COST					
63	HealthPartners	1604	Total Cost of Care Population-based PMPM Index	Total Cost Index (TCI) is a measure of a primary care provider's risk adjusted cost effectiveness at managing the population they care for. TCI includes all costs associated with treating members including professional, facility inpatient and outpatient, pharmacy, lab, radiology, ancillary and behavioral health services.	Per capita (population- or patient-based).
64	HealthPartners	1598	Total Resource Use Population-based PMPM Index	The Resource Use Index (RUI) is a risk adjusted measure of the frequency and intensity of services utilized to manage a provider group's patients. Resource use includes all resources associated with treating members including professional, facility inpatient and outpatient, pharmacy, lab, radiology, ancillary and behavioral health services.	Per capita (population- or patient-based)
65	CMS	2158	Payment-Standardized Medicare Spending Per Beneficiary (MSPB)	The MSPB Measure assesses the cost of services performed by hospitals and other healthcare providers during an MSPB hospitalization episode, which comprises the period immediately prior to, during, and following a patient's	This measure is a per episode evaluation.

Row #	Steward	NQF #	Title	Description	Notes
				hospital stay. Beneficiary populations eligible for the MSPB calculation include Medicare beneficiaries enrolled in Medicare Parts A and B who were discharged from short-term acute hospitals during the period of performance.	
66	CMS	N/A Not endorsed	Total Per Capita Cost Measure	The ratio of all actual Medicare FFS Parts A and B payments to a physician or medical group for beneficiaries attributed to them over a calendar year to all expected payments to the physician or medical group, multiplied by the payment for the average beneficiary in the sample.	

APPROPRIATENESS/OVERUSE

Row #	Steward	NQF #	Title	Description	Notes
67	AHRQ	0357	Abdominal Aortic Aneurysm (AAA) Repair Volume (IQI 4)	The number of hospital discharges with a procedure for abdominal aortic aneurysm (AAA) repair for patients 18 years and older or obstetric patients. Includes metrics for the number of discharges grouped by diagnosis and procedure type.	
68	AHRQ	0355	Bilateral Cardiac Catheterization Rate (IQI 25)	Percent of discharges with heart catheterizations in any procedure field with simultaneous right and left heart (bilateral) heart catheterizations.	
69	AHRQ	0361	Esophageal Resection Volume (IQI 1)	Number of discharges with a procedure for esophageal resection	
70	AHRQ	0366	Pancreatic Resection Volume	The number of hospital discharges with a procedure	

Row #	Steward	NQF #	Title	Description	Notes
			(IQI 2)	code of partial or total pancreatic resection for patients 18 years and older or obstetric patients. Excludes acute pancreatitis admissions.	
71	AMA-PCPI	0654	Acute Otitis Externa: Systemic antimicrobial therapy – Avoidance of inappropriate use	Percentage of patients aged 2 years and older with a diagnosis of AOE who were not prescribed systemic antimicrobial therapy	
72	Partners HealthCare System, Inc.	0755	Appropriate Cervical Spine Radiography and CT Imaging in Trauma	Percent of adult patients undergoing cervical spine radiography or CT imaging for trauma who have a documented evidence-based indication prior to imaging (Canadian C-Spine Rule or the NEXUS Low-Risk Criteria).	
73	Partners HealthCare System, Inc.	0668	Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury	Percent of adult patients who presented within 24 hours of a non-penetrating head injury with a Glasgow coma score (GCS) >13 and underwent head CT for trauma in the ED who have a documented indication consistent with guidelines(1) prior to imaging.	
74	NCQA	0002	Appropriate Testing for Children With Pharyngitis (CWP)	The percentage of children 2–18 years of age who were diagnosed with pharyngitis, dispensed an antibiotic and received a group A streptococcus (strep) test for the episode. A higher rate represents better performance (i.e., appropriate testing).	
75	NCQA	0069	Appropriate treatment for children with upper respiratory infection (URI)	Percentage of children 3 months to 18 years of age with a diagnosis of URI who were not dispensed an antibiotic medication.	

Row #	Steward	NQF #	Title	Description	Notes
76	NCQA	0058	Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis	The percentage of adults 18–64 years of age with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription.	
77	NCQA	0315	Back Pain: Appropriate Imaging for Acute Back Pain	Percentage of patients at least 18 years of age and younger than 80 with a diagnosis of back pain for whom the physician ordered imaging studies during the six weeks after pain onset, in the absence of “red flags” (overuse measure, lower performance is better).	
78	NCQA	0309	Back Pain: Appropriate Use of Epidural Steroid Injections	Percentage of patients at least 18 years of age and younger than 80 with back pain who have received an epidural steroid injection in the absence of radicular pain AND those patients with radicular pain who received an epidural steroid injection without image guidance (i.e. overuse measure, lower performance is better).	
79	NCQA	0312	Back Pain: Repeat Imaging Studies	Percentage of patients at least 18 years of age and younger than 80 with a back pain episode of 28 days or more who received inappropriate repeat imaging studies in the absence of red flags or progressive symptoms (overuse measure, lower performance is better).	
80	NCQA	0305	Back Pain: Surgical Timing	Percentage of patients at least 18 years of age and younger than 80 with a back pain episode of 28 days or more without documentation of red flags who had surgery within the	

Row #	Steward	NQF #	Title	Description	Notes
				first six weeks of back pain onset (overuse measure, lower performance is better).	
81	CMS	0669	Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery	This measure calculates the percentage of low-risk, non-cardiac surgeries performed at a hospital outpatient facility with a Stress Echocardiography, SPECT MPI or Stress MRI study performed in the 30 days prior to the surgery at a hospital outpatient facility (e.g., endoscopic, superficial, cataract surgery, and breast biopsy procedures). Results are to be segmented and reported by hospital outpatient facility where the imaging procedure was performed.	
82	American College of Cardiology Foundation	0670	Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients	Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation	
83	American College of Cardiology Foundation	0671	Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)	Percentage of all stress SPECT MPI, stress echo, CCTA and CMR performed routinely after PCI, with reference to timing of test after PCI and symptom status.	
84	American College of Cardiology Foundation	0672	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low	Percentage of all stress SPECT MPI, stress echo, CCTA, and CMR performed in asymptomatic, low CHD risk patients for initial detection and risk	

Row #	Steward	NQF #	Title	Description	Notes
			risk patients	assessment	
85	Partners HealthCare System, Inc.	0667	Inappropriate Pulmonary CT Imaging for Patients at Low Risk for Pulmonary Embolism	Percent of patients undergoing CT pulmonary angiogram for the evaluation of possible PE who are at low-risk for PE consistent with guidelines prior to CT imaging.	
86	CMS	0514	MRI Lumbar Spine for Low Back Pain	This measure calculates the percentage of MRI of the Lumbar Spine studies with a diagnosis of low back pain on the imaging claim and for which the patient did not have prior claims-based evidence of antecedent conservative therapy.	
87	AMA-PCPI	0655	Otitis Media with Effusion: Antihistamines or decongestants – Avoidance of inappropriate use	Percentage of patients aged 2 months through 12 years with a diagnosis of OME were not prescribed or recommended to receive either antihistamines or decongestants	
88	AMA-PCPI	0657	Otitis Media with Effusion: Systemic antimicrobials – Avoidance of inappropriate use	Percentage of patients aged 2 months through 12 years with a diagnosis of OME who were not prescribed systemic antimicrobials	
89	AMA-PCPI	0656	Otitis Media with Effusion: Systemic corticosteroids – Avoidance of inappropriate use	Percentage of patients aged 2 months through 12 years with a diagnosis of OME who were not prescribed systemic corticosteroids	
90	AMA-PCPI	0562	Overutilization of Imaging Studies in Melanoma	Percentage of patients, regardless of age, with a current diagnosis of Stage 0 through IIC melanoma or a history of melanoma of any stage, without signs or symptoms suggesting systemic spread, seen for an office visit during the one-year measurement period, for whom no diagnostic imaging studies were	

Row #	Steward	NQF #	Title	Description	Notes
				ordered	
91	The Joint Commission	0469	PC-01 Elective Delivery	This measure assesses patients with elective vaginal deliveries or elective cesarean sections at ≥ 37 and < 39 weeks of gestation completed.	
92	The Joint Commission	0471	PC-02 Cesarean Section	This measure assesses the number of nulliparous women with a term, singleton baby in a vertex position delivered by cesarean section.	
93	AMA-PCPI	0389	Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients	Percentage of patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy who did not have a bone scan performed at any time since diagnosis of prostate cancer	
94	CMS	0513	Thorax CT: Use of Contrast Material	This measure calculates the percentage of thoracic CT studies that are performed with and without contrast out of all thoracic CT studies performed	
95	NCQA	0052	Use of Imaging Studies for Low Back Pain	The percentage of members with a primary diagnosis of low back pain who did not have an imaging study (plain x-ray, MRI, CT scan) within 28 days of the diagnosis.	
96	CMS	N/A Not endorsed	Overuse of Diagnostic Imaging for Uncomplicated Headache	DRAFT: Percentage of all adult (≥ 18 years old) uncomplicated headache patients who received an order for a brain computed tomography (CT), computed tomography angiogram (CTA), magnetic resonance	

Row #	Steward	NQF #	Title	Description	Notes
				(MR), or magnetic resonance angiogram (MRA) study during the measurement period.	
97	CMS	N/A Not endorsed	Appropriate Use of DXA Scans in Women Under 65 Who Do Not Meet the Risk Factor Profile	DRAFT: Percentage of women ages 18 to 64 without select risk factors for osteoporotic fracture who received an order for a dual-energy x-ray absorptiometry (DXA) scan	
98	ACEP	N/A Not endorsed	Avoidance of inappropriate use of head CT in ED patients with minor head injury	Percentage of emergency department patients with minor head injury who received inappropriate imaging study (not clinically indicated)	
99	ACEP	N/A Not endorsed	Avoidance of inappropriate use of imaging for adult ED patients with atraumatic low back pain	Percentage of emergency department patients aged ≥ 18 years with atraumatic low back pain who received an inappropriate imaging study (not clinically indicated)	
100	American Society of Clinical Oncology	0213	Proportion admitted to the ICU in the last 30 days of life	Percentage of patients who died from cancer admitted to the ICU in the last 30 days of life	
101	American Society of Clinical Oncology	0215	Proportion not admitted to hospice	Percentage of patients who died from cancer not admitted to hospice	
102	American Society of Clinical Oncology	0210	Proportion receiving chemotherapy in the last 14 days of life	Percentage of patients who died from cancer receiving chemotherapy in the last 14 days of life	
103	American Society of Clinical Oncology	0211	Proportion with more than one emergency room visit in the last days of life	Percentage of patients who died from cancer with more than one emergency room visit in the last days of life	
104	Alabama Medicaid Agency	1381	Asthma Emergency Department Visits	Percentage of patients with asthma who have greater than or equal to one visit to the emergency room for asthma during the	

Row #	Steward	NQF #	Title	Description	Notes
				measurement period.	
105	CMS	0173	Emergency Department Use without Hospitalization	Percentage of home health stays in which patients used the emergency department but were not admitted to the hospital during the 60 days following the start of the home health stay.	