

**Summary Report of Technical Expert Panel Meetings:
Development of Outpatient Outcome Measures for the Merit-based
Incentive Payment System**

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Background

The Centers for Medicare & Medicaid Services (CMS) has contracted with Yale New Haven Health Services Corporation - Center for Outcomes Research and Evaluation (CORE) to develop outpatient outcome measures that can be used to assess the quality of care provided by clinicians who are eligible to participate in the Merit-based Incentive Payment System. The measures will be based on administrative claims data and will use unplanned hospital admission rates to assess the quality of care of ambulatory care providers (either individual eligible clinicians or groups of eligible clinicians who report under a common Tax Identification Number [TIN]). The measures will be risk-adjusted for patient demographic and clinical characteristics. The quality measure scores will be calculated using patient characteristics and outcomes documented on routinely submitted Medicare claims; therefore, the clinicians whose performance will be assessed by the quality measures will not need to submit any additional data directly to CMS.

As is standard with all measure development processes, CORE has convened a national Technical Expert Panel (TEP) of clinicians, patient advocates, and other stakeholders. The TEP is providing input to help shape the specifications of the measures, including the types of admissions to count in the measure outcomes and the risk-adjustment methodology. In the first phase of the project, the TEP is providing input on the first measure under development for the Merit-based Incentive Payment System (MIPS), a measure of unplanned hospital admissions for patients with multiple chronic conditions (hereinafter, MIPS MCC admission measure).

This report summarizes the feedback and recommendations received from the TEP during the first and second meetings to discuss the MIPS MCC admission measure. The report will be updated to include feedback and recommendations from future TEP meetings as they occur.

Measure Development Team

The CORE measure development team consists of individuals with expertise in outcome measure development, health services research, clinical medicine, statistics, and measurement methodology. See [Appendix A](#) for the full list of members of the CORE measure development team.

Mayur Desai, PhD, leads the measure development team. Dr. Desai is an epidemiologist and Associate Professor of Epidemiology at the Yale School of Public Health, where he teaches courses on epidemiologic research methods and data analysis. For the past 10 years at CORE, Dr. Desai has been a Lead Health Services Researcher involved in the development and reevaluation of numerous inpatient and outpatient claims-based quality measures for CMS.

Elizabeth Drye, MD, SM, Director of Quality Measurement at CORE and a Research Scientist at the Yale School of Medicine, oversees the work.

Finally, Vinitha Meyyur, PhD, the project's Contracting Officer's Representative, and additional CMS staff overseeing the MIPS program, including Daniel Green, MD, and Jennifer Harris, MS, BSN, RN, provide ongoing input.

The Technical Expert Panel

In alignment with CMS's Measures Management System (MMS), CORE released a public call for nominations to convene the TEP. The TEP's role in measure development is to provide feedback on key conceptual, clinical, and methodological decisions made in consultation with CORE's measure development team.

[Table 1](#) lists the project's TEP members. The TEP is comprised of individuals with diverse perspectives and backgrounds, including clinicians practicing in various settings, patients and caregivers, and other stakeholders with experience in measure development and policy. The appointment term for the TEP is from July 2017 through September 2018.

Table 1. TEP member name, affiliation, and location

Name	Organization (title); clinical specialty, if applicable	Location
Mary Barton, MD, MPP	National Committee for Quality Assurance (Vice President, Performance Measurement); internal medicine	Washington, DC
Larry Becker, BS	Xerox (Director, Strategic Partnerships, Alliances and Analytics, Director, Benefits [Retired])	Rochester, NY
Jacob Berman, MD, MPH	General Internal Medicine Center, University of Washington (Medical Director); internal medicine	Seattle, WA
Jane Brock, MD, MSPH	Quality Innovation Network – Quality Improvement Organization National Coordinating Center, Telligen (Clinical Director); preventive medicine	Greenwood Village, CO
Brenda Cook, MSN, RN, NEA-BC	Southcentral Foundation (Nursing Director)	Anchorage, AK
Namirah Jamshed, MBBS	University of Texas Southwestern Medical Center (Associate Professor, Division of Geriatric Medicine); geriatrics	Dallas, TX
David Kraus, MD	Stern Cardiovascular Center (Advanced Heart Failure and Cardiac Transplant Specialist); cardiology	Memphis, TN
Rozalina McCoy, MD, MS	Mayo Clinic (Assistant Professor of Medicine); endocrinology	Rochester, MN
J. Michael McWilliams, MD, PhD	Harvard Medical School (Associate Professor, Health Care Policy); internal medicine	Cambridge, MA
Amy Mullins, MD, CPE, FAAFP	American Academy of Family Physicians (Medical Director, Quality Improvement); family medicine	Leawood, KS

Name	Organization (title); clinical specialty, if applicable	Location
Diane Padden , PhD, CRNP, FAANP	American Association of Nurse Practitioners (Vice President, Professional Practice & Partnerships); family nurse practitioner	Austin, TX
Robert Roca , MD, MPH, MBA	Sheppard Pratt Health System/American Psychiatric Association (Vice President/Medical Director); psychiatry	Baltimore, MD
Jason Sico , MD, MHS, FAHA, FACP	Yale School of Medicine (Assistant Professor of Neurology and Internal Medicine); neurology	New Haven, CT
Mary Smith , DNP, FNP-BC, ONP-C, RNFA	Starkville Orthopedic Clinic (Nurse Practitioner); family nurse practitioner	Starkville, MS
Barbara Spivak , MD	Mount Auburn Cambridge Independent Practice Association (President); internal medicine	Brighton, MA
Jennefer Watson	Patient Caregiver	Jacksonville, FL
Daniel Weiner , MD, MS	Tufts University School of Medicine (Associate Professor of Medicine); nephrology	Boston, MA
Roger Wells , PA-C	Howard County Medical Center (Family Practice and Emergency Medicine Physician Assistant)	St. Paul, NE
Stephanie Wolf-Rosenblum , MD, MMM, FACP, FCCP	Southern New Hampshire Health System (Physician Administrator and Vice President of Development and External Affairs); pulmonology and sleep medicine	Nashua, NH
Patient	Participation is confidential	--

Technical Expert Panel Meetings

CORE held its first TEP meeting on July 20, 2017 (TEP Meeting 1), and its second TEP meeting on September 18, 2017 (TEP Meeting 2). CORE anticipates holding one or two additional meetings through September 2018 (see [Appendix B](#) for the TEP meeting schedule). This summary report contains a summary of the first two TEP meetings that CORE hosted.

TEP meetings follow a structured format. CORE presents key issues identified during measure development and a proposed approach to addressing them, and TEP members review, discuss, and advise on the issues.

Key Issues Discussed During Technical Expert Panel Meeting 1

Prior to the first TEP meeting, CORE provided the TEP members with materials for review. Materials prepared for the TEP included:

- An overview of TEP member responsibilities.
- The project's overview.

- An overview of Department of Health & Human Services (HHS) and CMS MIPS program policy relevant to the project.
- Background on development of the first measure under development (the MIPS MCC admission measure) and prior CMS/CORE work on measuring hospital admissions.
- The types of admissions CORE proposed to count in the MIPS MCC measure outcome and the rationale for the recommended admission types.

In addition to providing input on the measure outcome, TEP members also asked questions about or commented on several other aspects of the measure, including the measure's cohort, risk adjustment, reliability, provider attribution, and how the measure will fit in with other CMS programs.

Executive Summary of Technical Expert Panel Meeting 1

Overview of Information Presented by CORE

CORE reviewed:

- Goals of the meeting, project overview, and TEP Charter.
- Background on MIPS.
- Approach to measure development.
- Recommendations for admission types to count in the measure.

Overview of TEP Feedback

The TEP:

- Reviewed and approved the TEP Charter, without any modifications.
- Asked questions about and made suggestions to modify the MIPS MCC measure cohort. Specifically, the TEP:
 - Discussed potential modifications to the cohort's qualifying conditions, including potentially dropping depression and adding diabetes.
 - Asked if patients residing in skilled nursing facilities (SNFs), rehabilitation centers, or hospice would be included in the MIPS MCC measure's cohort.
- Provided input on the types of admissions to count in the measure outcome and asked for clarifying information. Specifically, one or more TEP members:
 - Expressed concerns with not counting admissions following discharge from a previous hospitalization and indicated that the post-discharge admission types would be sensitive to the post-discharge time period we select.
 - Did not favor removing admissions for "other specific categories" (for example, small bowel obstruction).
 - Suggested not counting the first admission for certain diagnoses (for example, atrial fibrillation and congestive heart failure).

- Suggested defining the outcome by starting with the types of admissions we want to count in the measure rather than starting broad and excluding certain types of admissions.
- Asked for information on what types of admissions are included in the outcome rather than focusing on the types of admissions not counted in the outcome.
- Asked how the MIPS MCC measure relates to measures in other CMS value programs (for example, episode-of-care measures).
- Noted that decisions about the cohort, outcome, and attribution approaches are intertwined and suggested it was challenging to come to a decision on the types of admissions to count in the measure outcome without information about the other measure components.
- Requested further information about elements of the measure not discussed in the meeting, such as the approach to risk adjustment and types of providers to whom patient health outcomes would be attributed.

Detailed Summary of Technical Expert Panel Meeting 1

Welcoming Remarks

- The CORE team and CMS welcomed the TEP members to the meeting to discuss the development of outpatient outcome measures for MIPS. Of the 20 total TEP members, 15 attended the meeting. The CORE team reviewed the confidentiality agreement and the funding source for the project.

TEP Charter

CORE Presentation to the TEP

- CORE reviewed the TEP Charter, which included the TEP's purpose and TEP member responsibilities, and sought the TEP's feedback on and approval of the Charter.

TEP Feedback

- The TEP approved the TEP Charter without modification.

Project Overview

CORE Presentation to the TEP

- CORE presented an overview of the project and its current phase, Phase 1. Phase 1 started in September 2016, will end in December 2017, and focuses on developing a measure of hospital admissions for patients with MCCs for the MIPS program.
- CORE outlined the current and immediate next stages of measure development: reviewing the types of admissions to count in the measure outcome during this TEP meeting and following up with a meeting to discuss to which types of primary care and specialist clinicians the measure should apply (attribution).

TEP Feedback

- The TEP had no questions about or input on the project's overview.

Merit-based Incentive Payment System (MIPS)

CORE Presentation to the TEP

- CORE provided an overview of CMS's Quality Payment Program (QPP) and specifically MIPS to orient the TEP to how the program is currently structured. CORE further explained that we would highlight the aspects of CMS policy that are relevant to the TEP's review as we discuss different measure components and decisions over the course of the project.
- CORE described the type of providers included in MIPS and explained that quality is one of four performance categories under the MIPS that roll up to a summary score that will be used to adjust clinicians' Medicare payments.
- CORE further explained that the team is building a risk-adjusted outcome measure for the quality performance category of MIPS. The quality performance category in the first year of the program (2017 measurement year/2019 payment adjustment) will account for 60% of the total performance score.
- The measure will be based off a measure that CORE previously developed to evaluate Accountable Care Organization (ACO) quality. CORE is adapting the ACO MCC measure for use to evaluate provider quality under the MIPS.
 - CORE noted that clinician participation in the ACO program is voluntary. The ACO MCC measure evaluates this coordinated care provided by ACOs, so the score is reported at the ACO level. Under the MIPS, ambulatory care clinicians' participation is mandatory, and clinicians are held accountable individually or as part of clinician groups who choose to report under the same TIN.

TEP Feedback

- The TEP had no questions about or input on the MIPS program structure.

Approach to Measure Concept and Types of Admissions to Count in the Measure Outcome

CORE Presentation to the TEP

- CORE explained that the goal of the project is to adapt an existing ACO quality measure for the MIPS setting (ACO measure title: ACO-38: All-cause Unplanned Admissions for Patients with MCCs).
- CORE outlined three components of the MIPS MCC measure under development and how they relate to the components of the ACO MCC measure.
 1. Cohort: CORE will use the same patient cohort for the MIPS MCC measure as the ACO MCC measure to harmonize across federal programs: Medicare Fee-for-Service (FFS) patients aged 65+ years with two or more of the following eight conditions:

- i. Acute myocardial infarction (AMI),
 - ii. Alzheimer’s disease and related disorders or senile dementia,
 - iii. Atrial fibrillation,
 - iv. Chronic kidney disease (CKD),
 - v. Chronic obstructive pulmonary disease (COPD) and asthma,
 - vi. Depression,
 - vii. Heart failure, or
 - viii. Stroke and transient attack (TIA).
- 2. Risk-adjustment model: CORE explained that we will develop and validate a risk model that accounts for case-mix differences across MIPS eligible clinicians/clinician groups. The choice of risk-adjustment variables will be based on the related ACO MCC measure, the medical literature, TEP input, and empiric analyses. CORE will describe the approach and model at a later TEP meeting.
- 3. Outcome: CORE noted that the outcome for the ACO MCC measure is the number of acute, unplanned admissions per 100 person-years. For the MIPS MCC measure, we will refine the outcome to only include admissions that indicate a quality signal for ambulatory care provided by eligible clinicians or clinician groups.
- CORE further described and sought input on the admission types CORE proposed to count in the measure. CORE explained that we do not assume admission rates for the included types of admissions should be zero, but that better care can lower the risk of the included admissions for patients.
- CORE explained that we recommend including most admissions, since many types of admissions can be reduced through optimal care, and presented the specific types of admissions that we propose to exclude from the measure outcome because it is less likely that high quality ambulatory care will lower the risk of these admissions:
 - 1) Planned admissions.
 - 2) Post-discharge admissions: admissions occurring shortly after discharge from the hospital for another admission.
 - 3) Admissions related to:
 - a) Complications of procedures or surgeries,
 - b) Accidents or injuries, or
 - c) Other specific categories (for example, small bowel obstruction).
- CORE shared that 17.7% of all admissions are not counted after applying the proposed exclusions listed above (1, 2, 3a, 3b, 3c).

TEP Feedback on Types of Admissions to Count in Measure Outcome

Fourteen TEP members commented on the types of admissions to count in the measure outcome.

- Three TEP members agreed conceptually with CORE’s proposal to not count the following admissions in the measure:

- 1) Planned admissions.
 - 2) Post-discharge admissions: admissions occurring shortly after discharge from the hospital for another admission.
 - 3) Admissions related to:
 - a) Complications of procedures or surgeries,
 - b) Accidents or injuries, or
 - c) Other specific categories (for example, small bowel obstruction).
- Additionally, two members agreed with not counting planned admissions.
 - One TEP member disagreed with excluding admissions related to complications of procedures or surgeries. The TEP member noted that ambulatory care providers can lower the risk of admission following some procedures (for example, orthopedic procedures).
 - Three TEP members were uncertain about excluding post-discharge admissions.
 - Two of the TEP members emphasized the importance in selecting a buffer time period (time between discharge from hospital and an admission [readmission] that we would potentially not count in the measure as an indicator of ambulatory care quality) and acknowledged this would be challenging.
 - One of the TEP members suggested not counting admissions within 30 days of discharge for consistency with existing CMS readmission measures; a second TEP member supported consistency in defining measure components whenever possible. However, a third TEP member disagreed and cited that approximately half of heart failure admissions occur within 30 days of discharge.
 - Two TEP members disagreed with excluding certain admissions related to accidents or injuries.
 - One of these TEP members suggested counting injuries due to poor medication management.
 - One of these TEP members suggested counting suicide (or confirming suicide was not labeled an accident).
 - Three TEP members disagreed with not counting admissions related to “other specific categories.”
 - Some TEP members suggested additional inclusions or exclusions.
 - One TEP member suggested not including the first admission for a condition, explaining that for certain conditions (such as atrial fibrillation and congestive heart failure) the first admission for the condition is not preventable, but that subsequent admissions can be reduced. However, this TEP member recognized this would require a sophisticated approach that may not be feasible to implement.
 - One TEP member inquired about the role of outpatient management for polypharmacy in admissions and readmissions, and suggested including admissions due to poor medication management.

- One TEP member suggested not counting admissions for aspiration pneumonia.
- One TEP member suggested counting observation stays in addition to hospital admissions.
- Three TEP members suggested defining the outcome by starting with the types of admissions we want to count in the measure rather than starting broad and excluding certain types of admissions.

TEP Feedback on Measure Cohort

Four TEP members commented on the MIPS MCC measure's cohort.

- One TEP member did not support including depression as a qualifying condition for the MIPS MCC measure cohort given the lack of availability of psychiatrists, especially in rural areas, and because costs of mental health care are outside of the control of MIPS-eligible ambulatory care clinicians or clinician groups.
 - Two TEP members differed. One TEP member indicated it will be problematic going forward if mental illness (depression) continues to be treated separately from a medical condition and from whole-person care, especially in the context of shifting towards value-based care, which is holistic. The second TEP member acknowledged that the availability of behavioral health resources is challenging yet noted that depression is a comorbidity and a major reason for hospital admission.
- Two TEP members asked why diabetes is not included as a qualifying cohort condition and suggested including diabetes as a qualifying condition. TEP members noted that patients with diabetes are at higher risk of hospitalization and including diabetes could increase the sample size (leading to increased measure reliability).
 - CORE clarified that our definition of patients with MCCs captures about half of the Medicare FFS beneficiaries with diabetes. CORE further explained that we did not include diabetes as a qualifying condition because diabetes is a common condition with highly variable severity, and we decided against expanding the cohort to include patients with more limited disease. The cohort, as currently defined, captures the higher-risk diabetes patients with more severe, longer-standing diabetes who have developed comorbidities such as heart or kidney disease that qualify them for inclusion in the cohort.
 - CORE also noted that there is an admission measure in the ACO program that focuses on patients with diabetes, and that it is a priority for CMS to measure the quality of ambulatory care provided to patients with MCCs.
- Two TEP members asked about patient origin (for example, skilled nursing facilities, rehabilitation facilities, and hospice) and if patients originating from these care settings would be included or excluded from the cohort.
 - One TEP member suggested that SNF patients be included in the cohort because the risk of admission could be lowered with higher-quality SNF care.

- On the topic of patients originating from rehabilitation centers, one TEP member noted that patients leaving hospitals often return to very poor settings for care management. The TEP member also acknowledged that we may be able to resolve this with appropriate risk adjustment.

TEP Feedback on Measure Reliability

Two TEP members commented on measure reliability.

- These TEP members suggested setting a minimum sample size for measure use in order to improve reliability.

TEP Feedback on Attribution Algorithm

Three TEP members asked to whom the measure would apply (for example, primary care or certain specialist clinicians, such as cardiologists or pulmonologists, among others).

- One of the three TEP members noted that attribution and the types of admissions to count in the outcome are intertwined, and both need to be considered together.
 - In response, CORE noted we may limit the types of providers to whom the measure would apply, pending forthcoming analysis and TEP input.
 - CORE further clarified that we are working within the MIPS program's attribution algorithm, which assigns patients to providers based on the majority of providers' Evaluation & Management (E&M) charges using a two-step process. With this algorithm, a patient is first assigned to a primary care clinician or, if one is not identified, to a specialist (for example, cardiologist or pulmonologist) with the greatest amount of E&M charges (81 FR 77135).

TEP Feedback on Risk-Adjustment Model

Three TEP members inquired about the risk-adjustment model.

- The three TEP members expressed interest in learning more about the development of the risk-adjustment model, and one TEP member emphasized the need for a robust risk-adjustment model. Another TEP member inquired how the risk model will account for patients with cancer or metastatic disease.
 - CORE responded that we will develop and discuss the risk-adjustment model after we finalize the admission types that we will include in the measure outcome.

TEP Feedback on Program Fit

- Two TEP members asked how the MIPS MCC admission measure will fit into the scope of other measures in this program. Additionally, these TEP members wondered how the MIPS MCC measure will work within other CMS programs that measure the same patients or outcomes.

Summary

- TEP members generally supported the concept of adapting the ACO MCC measure to measure MIPS-eligible ambulatory care clinicians and clinician groups.
- TEP members generally supported the proposed admission exclusions, while providing suggested refinements; however, some members felt a better approach to getting a final list would be to affirmatively state the types of admissions we want to include, rather than start broad and exclude specific admission types. In addition, one noted that the outcome scope was related to other measure decisions that are pending and would like to further consider the outcome once the measure is more fully defined.
- Some posed questions and made guiding comments regarding the measure cohort, risk-adjustment model, the attribution algorithm, and how this measure and MIPS will fit in with other CMS programs.
- CORE thanked the TEP for its input and explained that after we finalize the outcome, we will focus on attribution and risk adjustment, and that there will be additional opportunities to discuss these topics in the future.

Key Issues Discussed During Technical Expert Panel Meeting 2

Prior to the second TEP meeting, CORE provided the TEP members with materials for review. Materials prepared for the TEP included:

- Updates on the status of the development of the MIPS MCC admission measure and progress since TEP Meeting 1.
- A review of additional types of admissions proposed for exclusion from the measure outcome, including (1) admissions within a short buffer period following discharge from a hospital, skilled nursing facility (SNF), or acute rehabilitation facility; and (2) admissions from hospice.
- A review of the scope of providers to whom the measure would be applicable.

The summary below includes TEP input from TEP Meeting 2 and feedback from one TEP member who was unable to attend the meeting but provided input to CORE by email.

Executive Summary of Technical Expert Panel Meeting 2

Overview of Information Presented by CORE

CORE reviewed:

- The status of the development of the MIPS MCC admission measure.
- Additional types of admissions to consider excluding from the measure outcome: (1) admissions within a potential post-discharge buffer period from a hospital, SNF, or acute rehabilitation facility; and (2) admission after hospice entry.
- Proposed scope of providers the measure would assess.

Overview of TEP Feedback during and after TEP Meeting 2

The TEP provided input on:

- Whether to exclude admissions that occur within a buffer period after discharge from a hospital, SNF, or acute rehabilitation facility, and their preferred length for the buffer period, if any. Specifically:
 - 13 TEP members favored excluding admissions during a buffer period after discharge from a hospital, SNF, or acute rehabilitation center. One member did not favor a buffer period and one was unsure.
- The length of the post-discharge buffer period. Specifically:
 - 10 TEP members agreed that following hospitalization, a buffer period longer than 7 days was more reasonable than the shorter 3- or 7-day period because it would give ambulatory care providers time to have their care plan take effect.
 - TEP members differed on the appropriate buffer period following a SNF or rehabilitation stay; suggestions ranged from 0 to 30 days. TEP members shared many reasons why the buffer period should arguably be shorter or longer than that for hospital discharges or was not necessary at all.
 - One TEP member suggested CORE perform analysis to understand the implications of different buffer periods on the measure outcome.
- Whether to exclude admissions from hospice. Specifically:
 - All but one of the seven commenting TEP members favored excluding admissions from hospice.
- Whether the measure should assess primary care clinicians and a subset of specialists who may manage the care for MCC patients.
 - Several TEP members recommended that the measure assess hematologists/oncologists as well.
 - One TEP member recommended that the measure assess primary care providers first and then use data to inform which specialists to include in the future.
 - A few TEP members commented that most specialties (excluding cardiology, pulmonology, nephrology, and hematology/oncology) were not active enough in the post-discharge care phase to have patient outcomes attributed to them.
 - One TEP member emphasized that given the current attribution algorithm, few specialty-only practices would be assessed even if we permitted it.

Detailed Summary of Technical Expert Panel Meeting 2

Welcoming Remarks

- CORE welcomed the TEP members to the second TEP meeting. Of the 20 TEP members, 14 attended the meeting, and one commented via email after the meeting. In addition, the CORE team reviewed the confidentiality agreement.

Meeting Overview

CORE Presentation to the TEP

- CORE provided an overview of the meeting's goals, noting that feedback from TEP Meeting 1 helped to inform topics for TEP Meeting 2.
- CORE recapped input from TEP Meeting 1 that was relevant to TEP Meeting 2, namely:
 - CORE heard relative consensus from the TEP around excluding three types of admissions from the outcome: 1) planned hospital admissions, 2) admissions related to complications of surgeries (including small bowel obstruction), and 3) admissions related to accidents or injuries.
 - Based on TEP feedback, CORE consolidated excluded admissions into three categories, confirmed that we are including admissions for intentional injuries/suicide attempts in the measure outcome, and is considering whether to exclude admissions for aspiration pneumonia.
 - CORE acknowledged that TEP members in TEP Meeting 1 had said some measure aspects are better considered iteratively, such as the types of admissions to count and the attribution algorithm. CORE agreed and is open to revisiting the topics later in development.

Admissions within a Potential Post-Discharge Buffer Period

CORE Presentation to the TEP

- CORE explained we are considering excluding two additional types of admissions from the outcome:
 - 1) Admissions occurring within a short “buffer period” of time (for example, 3 or 7 days) after discharge from three inpatient facilities:
 - a) Hospitals,
 - b) SNFs, or
 - c) Acute rehabilitation facilities.
 - 2) Admissions from hospice.
- CORE articulated the rationale for excluding admissions within a buffer period after discharge from the three types of inpatient facilities (1a, 1b, 1c). Specifically, CORE described considerations for the buffer period (7 days as an outside bound) were:
 - Based on clinical experience, the more proximal an admission is to hospital discharge, the more likely the risk of admission is primarily driven by hospital events. Likewise, for 1b and 1c, CORE noted that, compared with ambulatory care clinicians, the care provided by SNF and acute rehabilitation providers, respectively, is more likely to influence patients' post-discharge risk of hospital admission.
 - Informed by a targeted literature review of hospital admissions, which reinforced that the hospital quality signal is strongest within a few days after discharge.

- CORE referenced an article¹ led by CORE's Director, Dr. Harlan Krumholz. The study showed the risk of readmission for three conditions (heart failure, AMI, pneumonia) peaked 2-4 days after discharge and demonstrated it took more than a week for the risk to decline by at least 50%. This is evidence of a time of shared responsibility between inpatient and outpatient providers during post-discharge transitional care.
 - Consistent with CMS's recommended Transitional Care Management (TCM) services, in which providers are encouraged to have a face-to-face visit within 7 days of discharge for Medicare beneficiaries of high medical decision complexity.
- CORE did not think that data analysis would change the rationale for the buffer period but welcomed any TEP recommendations for supportive data analysis.
- For reference, CORE shared the frequency of admission types excluded from the measure outcome and the outcome rate following the proposed exclusions, assuming a 7-day buffer period; in total, 29.9% of all admissions are not counted in the measure outcome after applying exclusions, and the outcome rate is 55.3 admissions per 100 person-years.

TEP Feedback on Excluding Admissions within a Potential Post-Discharge Buffer Period

15 TEP members commented on excluding admissions with a potential post-discharge buffer period. Of these:

- 13 TEP members agreed with excluding admissions during a buffer period after hospital discharge, from SNF, and/or from rehabilitation; and stated that ambulatory care providers should not be considered accountable for their patients' care during a certain time period after hospital discharge because providers need adequate time to see their patients and manage their care following discharge.
- One TEP member did not agree with excluding these admissions.
- One TEP member was unsure about excluding admissions during a buffer period.

Common themes from the 15 TEP members included:

- Most of the group favored a buffer period longer than the 3- or 7-day one that CORE originally proposed.
- Health systems in which providers practice vary in level of maturity and/or integration, which can limit the information that they provide at discharge.
- Excluding admissions during a buffer period would promote shared accountability for patient health outcomes.
- Varying the length of the buffer period by discharge diagnosis or reason for admission would incentivize follow-up when critical.

¹ Krumholz HM, Hsieh A, Dreyer RP, Welsh J, Desai NR, Dharmarajan K. Trajectories of Risk for Specific Readmission Diagnoses after Hospitalization for Heart Failure, Acute Myocardial Infarction, or Pneumonia. *PLoS ONE*. 2016;11(10):e0160492.

- CORE noted this is a complex approach, which CORE will consider.
- Accountability should be phased in over time. Starting with a longer buffer period and then shortening it would be similar to the way CMS is implementing the provisions of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

All 15 TEP members commented on the length of the post-discharge buffer period following hospitalizations. Of these:

- Two TEP members favored a shorter buffer period of 3 days.
 - One of these two TEP members was unsure about excluding admissions during a buffer period and stated that if there were to be a buffer period, it be variable in length depending on discharge diagnosis to incentivize quick follow-up when critical (for example, 3-4 days for hip fracture because early care is essential but longer for others), even if the patient is discharged from the hospital to a SNF.
- 10 TEP members favored a longer buffer period; suggestions ranged from 7 to 14 days at minimum.
 - All 10 TEP members agreed that following hospitalization, a buffer period longer than 7 days was reasonable because it would allow ambulatory care providers the time for their care plan to take effect. Of the 10 TEP members (not mutually exclusive):
 - Seven TEP members preferred a buffer period of or close to 14 days.
 - Four TEP members agreed that health facilities often lack sophistication or integration of communication mechanisms. Ambulatory care providers do not always receive notification when their patients are discharged from the hospital, and, therefore, these providers should not be held responsible for an admission that occurs within a buffer period after hospitalization. TEP members noted that this lack of transfer of information may restrict the provider's ability to see and manage the patient within 3 or 7 days.
 - One TEP member recognized hospitals are incentivized to rapidly discharge payments to save money, but did not think it would be fair to penalize ambulatory care providers because of this.
- Three TEP members favored a variable buffer period, a phased-in buffer period, or did not favor any specific length. Of these:
 - One TEP member favored a variable buffer period, contingent upon the patient's principal discharge diagnosis and its severity, which would incentivize sooner patient follow-up when critical.
 - One TEP member indicated that phasing in the buffer period would align with the implementation of MACRA provisions. The TEP member suggested first using a longer buffer period, such as 30 days, and eventually shortening it to 14 days.

- One TEP member did not favor any specific length of time but suggested CORE perform analysis to understand the implications of different buffer periods on the measure outcome.

All 15 TEP members commented on the length of the post-discharge buffer following a SNF or rehabilitation stay. Of these:

- One TEP member favored the proposed buffer period following a SNF or acute rehabilitation stay (3 or 7 days) and stated that the risk of hospital admission after discharge from SNF is high and a reflection of SNF care (not ambulatory care).
- Seven TEP members favored a longer buffer period (between 7 and 14 days) following a SNF or rehabilitation stay. Of these:
 - Two TEP members stated that ambulatory care providers have limited or no control over their patients' care plans while in a SNF or rehabilitation facility.
 - Two TEP members noted that untimely discharge information prevents ambulatory care providers from knowing when their patients have been discharged from a SNF or rehabilitation facility.
 - One TEP member stated that ambulatory care providers need the opportunity to refine their patients' treatment plans so that any subsequent admissions more likely reflect the quality of care provided by them.
- Five TEP members favored a variable buffer period, a phased-in buffer period, or did not favor any specific length following a SNF or rehabilitation stay. Of these:
 - Two TEP members favored a variable buffer period contingent upon the patient's principal discharge diagnosis and its severity, which would incentivize sooner patient follow-up when critical.
 - One TEP member recommended phasing in the buffer period to align with the implementation of MACRA provisions. The TEP member suggested first using a longer buffer period, such as 30 days, and eventually shortening it to 14 days.
 - Two TEP members were ambivalent regarding the length of a buffer period for SNF and rehabilitation in the measure outcome.
- Two TEP members felt there should not be a buffer period following discharges from SNF or acute rehabilitation.

Three TEP members asked follow-up questions and provided additional feedback on the potential post-discharge buffer period.

- One TEP member asked if the MIPS MCC admission measure would be voluntary or mandatory for providers to report. The TEP member's understanding was that providers could choose which measures to report for MIPS and if a provider performed poorly on the measure, a provider may not choose it for reporting.
 - CORE responded that we will follow up with CMS regarding whether the measure would be mandatory or voluntary under the MIPS.

- A second TEP member noted that it would be helpful to understand how quickly discharged patients should be seen by an ambulatory care provider who can adequately manage their care.
- A third TEP member suggested that if effective transitional care is a goal, CMS should require that all facilities provide discharged patients with clear follow-up information, including instructions to make an appointment with their ambulatory care provider if these providers are to be held accountable for patients' care and risk of subsequent hospitalization.

Admissions from Hospice

CORE Presentation to the TEP

- CORE introduced our consideration to exclude admissions that occur when patients are enrolled in Medicare's hospice benefit because the goal of hospice care is to prevent the need for hospital care.
- CORE noted that some admission and readmission reduction efforts have included hospice care as a component and that ambulatory care providers have relatively little influence on end-of-life care once a patient is enrolled in hospice and managed by a hospice team.
- CORE clarified that the materials presented to the TEP included rationale for both including admissions from hospice (better hospice care may lower admission rates) and excluding admissions from hospice (primary care providers may not have a real role in end-of-life care).

TEP Feedback on Excluding Admissions from Hospice

Seven TEP members commented on excluding admissions from hospice. Of the seven:

- One TEP member was unsure about excluding admissions from hospice but noted that if we were to include them, we would need to clarify how they are identified. The TEP member inquired how CORE identified admissions to inpatient hospice from an outpatient setting, such as when caretakers want to take or keep their family member home but then bring them back to the hospital. Additionally, the TEP member noted that some individuals end up in the hospital before being transitioned to inpatient hospice for reasons such as (lack of) hospice availability; a second TEP member agreed that this could be especially true in rural settings. Lastly, the TEP member stated that hospice is not always the same as no care, noting, for example, patients undergoing dialysis that are enrolled in hospice sometimes get admitted for preventable reasons.
 - CORE clarified that admissions to inpatient hospice are excluded from the outcome for the MIPS MCC admission measure; only admissions to acute care hospitals are counted.
- Six TEP members favored excluding admissions from hospice. Of these:

- One TEP member stated that patients are often in and out of the hospital during end-of-life care due to external factors that the ambulatory care provider cannot influence, including changing thoughts about the aggressiveness of care.
- Two TEP members noted that they take care of patients in hospice until the end but agreed with excluding admissions from hospice.
- Two TEP members added that no matter how well a family is prepared for end-of-life care with counseling and advance preparation, family members can get distressed in the last hours or days and insist a relative go to the hospital.
- One TEP member stated that the hospice benefit governs the appropriateness of admissions.

Proposed Scope of Providers

CORE Presentation to the TEP

- CORE explained that CMS seeks to apply the MIPS MCC admission measure to those ambulatory care clinicians for whom the outcome (unplanned admissions) reflects care quality. The clinicians would include those providing overall coordination of care for MCC patients and those managing the chronic diseases that put MCC patients at risk of admission.
- CORE recommended including in the measure primary care clinicians and a subset of specialists (cardiologists, pulmonologists, nephrologists, neurologists, and endocrinologists); all other specialists would not be assessed by this measure as they are not expected to manage MCC patients' overall care.
- CORE reviewed the attribution algorithm, which assigns patients to providers based on the preponderance of providers' Evaluation & Management (E&M) charges using a two-step process: 1) a patient is assigned to a primary care provider, or 2) if no primary care provider submits E&M claims for the patient, then patient is assigned to the specialist with the greatest amount of E&M charges. CORE noted that most patients are assigned to a primary care provider or to a group of providers that includes at least one primary care provider.
- CORE explained under the MIPS, clinicians and clinician groups will receive payment adjustments (positive, negative, or neutral) based on performance in four categories, one of which is quality.

TEP Feedback on Proposed Scope of Providers the Measure Would Assess

Three TEP members asked questions about the attribution algorithm and measure reporting.

- One TEP member asked whether clinicians are required to report one outcome measure by a certain date under the MIPS.
 - Another TEP member clarified that MIPS eligible providers must report on six measures, and one must be an outcome measure for the first year of the MIPS (and proposed for the second year of the MIPS).

- CMS clarified that CORE is developing at least one outcome measure. Before the measure is implemented for use under the MIPS, it will go through the federal rulemaking process during which stakeholders can comment on the measure. If the measure is finalized for the MIPS, it will be one of the outcome measures available for reporting.
- One TEP member asked how dialysis G-codes would be used in the attribution algorithm. In their experience, their medical practice bills once a month based on however many times they see a patient that month (could be two or three times).
 - CORE replied that we are unsure if some of the E&M codes used for attribution were G-codes and that CORE will email the TEP the full code set.
- One TEP member asked if reporting occurs at the individual or group level.
 - Another TEP member noted their expertise in MIPS and replied that it depends on how clinicians report under the MIPS. Under the MIPS, a group is defined as a single Taxpayer Identification Number (TIN), and clinicians who participate as part of the group are assessed at the group (TIN) level. Each clinician in a group would receive the same MIPS performance score and payment adjustment. Individual clinicians will get their own scores and payment adjustments.
 - CORE clarified that under the MIPS, clinicians and clinician groups will receive payment adjustments based on performance in four categories, of which one is quality.

Eight TEP members provided input on the proposed scope of providers the measure would assess: primary care clinicians and a subset of specialists (cardiologists, pulmonologists, nephrologists, neurologists, and endocrinologists).

- Five TEP members recommended adding hematologists/oncologists to the subset of specialists the measure would assess because these specialists, in addition to those proposed by CORE, often play a substantial role in managing patients' care, for example, iron infusion therapy for MCC patients who are anemic.
 - One of these five TEP members noted that other specialties are not active enough in the post-discharge phase or during the calendar year to have the patients attributed to them, and that the included specialties take care of their patients in a way that endocrinologists, surgeons, and neurologists do not.
- One TEP member favored broadening the specialists assessed by the measure as there is a need for measures that are reliable and applicable to broader types of providers in CMS's QPP. The TEP member noted there are currently a lack of available measures for specialists, such as nephrologists, as compared to primary care providers.
- One TEP member was concerned about a possible scenario in which a patient gets hospitalized and then is referred to a specialist for post-discharge follow-up. It would not be fair to hold the specialist accountable because the specialist may not have previously seen the patient.

- One TEP member suggested that CORE should consider risk adjusting for a clinician’s length of time in practice with the rationale that more experienced clinicians often see sicker patients, and therefore their patients may be at higher risk for admission. The TEP member also asked whether CMS would provide an identifier for patients in the MIPS MCC admission measure so that clinicians know that the patient will be counted towards their score for the MIPS MCC admission measure.
 - CORE clarified that CMS would use retrospective beneficiary assignment and calculate the TIN-level measure score after the year is over, and will check whether CMS plans to signal to providers how attribution may look so that providers get a sense of who their assigned MCC patients could be.
- One TEP member recommended starting with primary care providers and then expanding to specialists implicated by the hospital readmissions penalty conditions – cardiologists, pulmonologists, and vascular and orthopedic surgeons.
- One TEP member noted that given the attribution algorithm, few specialty-only practices would be assigned responsibility. The TEP member also noted that if the question is whether beneficiaries attributed in the second step should be counted in a multi-specialty group’s denominator, revisions to the assignment would be required to exclude the beneficiaries assigned to the specific specialties and that the beneficiaries assigned in step two are few and have lower overall spending.
- One TEP member asked if CORE could consider using new versus established “visit type” based on the billing code.

Summary

- TEP members generally agreed with excluding admissions within a post-discharge buffer period, although the majority of the TEP’s recommended buffer period length was longer than CORE’s original proposal.
- Most commenting TEP members favored excluding admissions from hospice, citing there are many external factors affecting a provider’s ability to manage their patients’ end-of-life care.
- TEP members generally supported including primary care providers and specialists in the scope of providers the measure will assess but had differing views on which specialists the measure should assess. Many TEP members agreed that the MIPS MCC admission measure assess the care provided by hematologists/oncologists.
- CORE thanked the TEP for its input and recapped next steps, including finalizing the measure outcome and the included provider specialties based on TEP feedback, developing the risk-adjustment model, performing measure testing, and hosting a call for public comment.

Appendix A. CORE Measure Development Team

Table 2. Center for Outcomes Research and Evaluation (CORE) Team Members

Name	Team Role
Mayur M. Desai , PhD, MPH	Project Lead
Faseeha K. Altaf , MPH	Project Coordinator
Andrea G. Barbo , MS	Analyst
Craig S. Parzynski , MS	Analyst
Zhenqiu Lin , PhD	Analytic Director
Abigail M. Alonso , BA	Research Assistant
Alexandra Harris , MPH	Research Associate
Kendall Loh , BS	Research Assistant
Kasia J. Lipska , MD, MHS	Clinical Investigator
Erica S. Spatz , MD, MHS	Clinical Investigator
Susannah M. Bernheim , MD, MHS	Clinical Investigator
Jeph Herrin , PhD	Statistical Consultant
Megan LoDolce , MA	Project Manager
Harlan M. Krumholz , MD, SM	Principal Investigator
Elizabeth E. Drye , MD, SM	Project Director

Appendix B. Technical Expert Panel Call Schedule

TEP feedback on CORE's approach to measure development will inform the measure specifications. CORE will engage and seek input from the TEP as we develop outpatient outcome measures through email communication and four meetings:

1. **TEP Meeting #1:** Thursday, July 20, 2017; 5:30 PM – 7:00 PM EST (Location: Teleconference/Webinar).
2. **TEP Meeting #2:** Monday, September 18, 2017; 1:00PM – 3:00 PM EST (Location: Teleconference/Webinar).
3. **TEP Meeting #3:** To be determined.
4. **TEP Meeting #4:** To be determined.