Heart Failure Workgroup Meeting Summary

MACRA Episode-Based Cost Measures: Clinician Expert Workgroups
Workgroup Webinar, June 22, 2021
June 2021

Contents

Project Overview

The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen, LLC to develop episode-based cost measures for potential use in the Merit-based Incentive Payment System (MIPS) to meet the requirements of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Acumen's measure development approach involves convening clinician expert panels to provide input in cycles of development ("Waves").[1] In Wave 4, instead of the typical Clinical Subcommittee (CS) process for episode group prioritization and selection, we obtained stakeholder input on candidate clinical areas and episode groups through a public comment period from December 16, 2020, to February 5, 2021.[2] This approach provided flexibility for a wider range of stakeholders to participate around their schedule. This approach will be revisited for future Waves of development. The prioritization criteria used to identify strong candidate episode groups and concepts were developed based on input from our technical expert panel (TEP), Person and Family Engagement (PFE), CS, and Clinician Expert Workgroups ("workgroups"). The following Wave 4 episode groups were finalized based on the prioritization criteria, public comments received, and discussions with CMS: (i) Emergency Medicine, (ii) Heart Failure, (iii) Low Back Pain, and (iv) Major Depressive Disorder.

We held a nomination period for workgroup members between April 26, 2021, and May 21, 2021. The workgroups are composed of clinicians with expertise directly relevant to the selected episode groups. Workgroups (of about 15-20 members) were finalized in June 2021, and they provided detailed input on the development of the selected episode groups during their first workgroup webinars from June 21 to June 24, 2021. For Wave 4, all workgroup meetings will be

[1] For information on measure development in Waves 3, refer to the 2020 Episode-Based Cost Measures Field Testing Wave 3 Measure Development Process document [PDF] (https://www.cms.gov/files/document/macra-cmft-ebcm-process-2020.pdf).

[2] For a summary of comments we received during the public comment period, refer to the MACRA Episode-Based Cost Measures: Wave 4 Measure Development Public Comment Summary Report document [PDF] (https://www.cms.gov/files/document/wave-4-public-comment-summary.pdf).

held virtually. The workgroups will convene for a second and third meeting to continue measure specification and refinement discussions before and after a national field test, currently slated for late 2021.

Heart Failure Workgroup Webinar, June 22, 2021

This meeting summary document outlines the purpose, discussion, and recommendations from the Heart Failure workgroup webinar. Section 1 provides an overview of the webinar goals and process. Section 2 summarizes the discussion and recommendations from the workgroup. Section 3 is an appendix that describes the materials and information provided to workgroup members prior to and during the webinar as preparation for discussion on detailed measure specifications.

1. Overview

The goals of the Heart Failure workgroup webinar on June 22, 2021, were the following:

(i) Provide input to specify a cost measure for potential use in MIPS that can accurately distinguish between good and poor performance among clinicians in terms of cost efficiency
(ii) Consider results of empirical analyses and the Person and Family Partner (PFP) findings
(iii) Provide input on episode group scope, trigger codes, how to account for patient sub-populations to ensure that the measure allows for meaningful clinical comparisons, and categories of services to assign to the episode group

The meeting was held via webinar and attended by all 20 workgroup members. The webinar was facilitated by an Acumen moderator, Dr. Rose Do. The Heart Failure workgroup chair was Dr. Paul Heidenreich, who also facilitated meeting discussions. Geri Lyn Baumblatt and Christine Norton were the PFPs that attended the webinar to discuss and address questions regarding the PFP findings. The MACRA Episode-Based Cost Measure Workgroup Composition List will contain the full list of members, including names, professional roles, employers, and clinical specialties; it will be posted on the MACRA Feedback Page.[3]

Stakeholders beyond the workgroup members had access to a public dial-in number to observe the meeting as part of Acumen's continued effort to increase the transparency of the measure development process.

Prior to the webinar, workgroup members were provided with information and materials to inform their meeting discussions (see Section 3). After the webinar, workgroup members were sent a recording of the webinar and were polled on their preferences to ensure the measure is developed based on well-documented stakeholder input. Based on National Quality Forum practices, the threshold for support was greater than 60% consensus among poll responses. This document summarizes the workgroup members' input from both the discussion as well as the polls.

This meeting was convened by Acumen as part of the measure development process to gather expert clinical input; as such, these are preliminary discussions and materials, which don't represent any final decisions about the measure specifications or MIPS.

[3] The composition list will be posted on the MACRA Feedback Page (https://www.cms.gov/Medicare/Quality-Payment-Program/Quality-Payment-Program/Give-Feedback).

2. Summary of Sessions and Discussion

This section is organized based on meeting sessions and describes workgroup member discussions and recommendations. The first sub-section summarizes the PFP findings discussed during the first session of the webinar (Section 2.1). The following sub-sections describe workgroup member discussions and recommendations on defining the episode group (Section 2.2), addressing sub-populations of interest for meaningful clinical comparison (Section 2.3), and assigning services to the episode group (Section 2.4), respectively. Section 2.5 describes the next steps.

2.1 Person and Family Partner (PFP) Findings and Discussion

The attending PFPs presented findings from focus groups with 5 PFPs conducted prior to the meeting. PFPs provided feedback about the initial diagnosis, the healthcare team and services furnished, and opportunities to improve care for managing the condition.

PFPs stated that a range of symptoms, services, and clinicians were important to their diagnosis. In particular, some PFPs said that difficulty breathing led to their initial diagnosis, although it was difficult to determine the start of their condition due to the presence of multiple comorbid chronic conditions. Additionally, services such as electrocardiograms, echocardiograms, and stress tests were used for their diagnosis. Furthermore, certain specialties, such as nurse practitioners and surgeons, were important in making and explaining their diagnosis. However, PFPs reported that it was difficult to understand their condition once they were diagnosed and that certain educational resources (e.g., infographics or videos) were helpful at the time of diagnosis, but they were rarely used by clinicians.

Once the PFPs were diagnosed, their care team was comprised by a range of clinician types. In particular, the PFPs reported that cardiologists, primary care clinicians, device nurses, cardiac rehabilitation specialists, nutritionists, mental health clinicians, at-home physical therapists, pulmonologists, and electrophysiologists were part of their care team. Given the wide range of clinicians providing care to these patients, the PFPs also noted the importance of medication reconciliation for coordination across their care team.

In managing their ongoing heart failure care, the PFPs reported that several symptoms and services were associated with their heart failure. Among other symptoms, the most problematic symptoms included exhaustion, depression, anxiety, high heart rate, dizziness, and shortness of breath. Managing clinicians also furnished a range of services, including cardiac monitoring, cardiac rehabilitation, ablation, pacemakers, stents, angiograms, and stress tests.

The PFPs also noted several areas where care quality could be improved through certain practices. First, they said that care coordination is an important indicator of quality that isn't always present for patients and caregivers. Second, the PFPs noted that increased clarity and information at the time of diagnosis would improve care quality, especially when family members and caregivers are involved in this process. Some of the materials that PFPs said would be helpful for patient education at the time of diagnosis include visuals, videos, infographics, and decision aids. In response, one workgroup member said that clinicians are being pressured to spend less time with their patients, so it's becoming more difficult to find the time to provide this level of education. This workgroup member suggested that it may be more valuable to outsource patient education, given the circumstance. Some workgroup members discussed the appropriate time to start patient education, with one member saying that education should begin in the inpatient setting and continue into the outpatient setting. In response to this conversation, the workgroup discussed the addition of patient education codes

as condition-related Current Procedural Terminology / Healthcare Common Procedure Coding System (CPT/HCPCS) codes for the measure (Section 2.2.1). At the end of this session, members also acknowledged the importance of delivering telehealth services to improve care quality, including medication reconciliation and remote monitoring technologies that could be used to better engage the patient in their heart failure care management.

2.2 Defining the Episode Group

In this session, Acumen reviewed the chronic condition framework for defining an episode group, including the algorithm for triggering these episodes. The goal was to refine the list of codes used to trigger a Heart Failure episode. To trigger a chronic condition episode, an attributed clinician group (identified by their Tax Identification Number [TIN]) must bill 2 claims with particular CPT/HCPCS codes within a defined period of time. Both of these claims must have an International Classification of Diseases, 10th revision (ICD-10) diagnosis code indicating heart failure. These CPT/HCPCS codes include the following:

- On a trigger claim, an outpatient evaluation and management (E&M) code that includes clinician visits in the outpatient setting, clinician's office, nursing facility, or assisted living facility that are intended to identify primary care
- On a confirming claim, either another outpatient E&M code or a condition-related CPT/HCPCS procedure code related to the treatment of heart failure

Section 2.2.1 provides a summary of the workgroup's input on the CPT/HCPCS codes used in triggering and confirming Heart Failure episodes. Then, Section 2.2.2 provides input on the measure scope and ICD-10 diagnosis codes used to identify heart failure patients on triggering and confirming claims.

2.2.1 Discussion of CPT/HCPCS Codes

When Acumen discussed the algorithm that's used to trigger episodes, they mentioned that the current chronic condition measures (Asthma / Chronic Obstructive Pulmonary Disease [COPD] and Diabetes) use a 180-day trigger window (the maximum window of time between the trigger and confirming claims that create a trigger event) to capture clinician and patient relationships. In addition to other chronic condition measures using this timeframe, Acumen explained the benefits and drawbacks of having a shorter or longer trigger window, noting that a 180-day trigger window captures between 90 to 95% of all trigger events for the Heart Failure episode group. Workgroup members were asked in the poll whether they would like to keep or change the 180-day trigger window.

The workgroup also reviewed the preliminary list of outpatient E&M codes used to trigger Heart Failure episodes and suggested the addition of advanced care planning, transitional care, chronic care management, and home health care CPT/HCPCS codes. First, for advanced care planning codes, members noted that these codes should be added because they're often billed by specialists and help to identify a more complex patient population. As such, they recommended the addition of CPT/HCPCS codes 99497 and 99498. Second, for transitional care codes, these codes are used after a patient is discharged from an inpatient stay. Given that many heart failure patients receive their initial diagnosis after an inpatient stay, members recommended adding CPT/HCPCS codes 99495 and 99496. Lastly, the workgroup suggested the addition of chronic care management CPT/HCPCS code 99491 and home health care CPT/HCPCS codes G0179-G0181 to better reflect the scope of interactions that an attributed clinician (identified by their combination of TIN and National Provider Identifier [TIN-NPI]) has with a patient diagnosed with heart failure.

Members also discussed additions to the condition-related CPT/HCPCS codes that affirm a clinician's role in managing a patient's chronic heart failure. Based on PFP input (Section 2.1) which noted that heart failure patients may benefit from comprehensive patient education about their condition, one workgroup member suggested including patient education codes as confirming codes, and several members agreed with this recommendation. Another workgroup member said that they do a 6-minute walk with their new heart failure patients to assess their functional capacity, so this could also be explored as a confirming claim code for the measure.

In addition to the CPT/HCPCS codes, the workgroup also had an extensive discussion on whether Heart Failure episodes should be triggered based on inpatient stays. The current chronic condition measures don't trigger based on inpatient stays, but they do allow claims from inpatient stays as confirming claims. This is because the intent of chronic condition measures is to capture clinicians providing ongoing care management for patients with a particular chronic condition, rather than acute episodes of care. Workgroup members noted that while many of their new heart failure patients in primary care settings receive their diagnosis during an inpatient stay, inpatient clinicians are often not the ones that manage the patient's chronic heart failure care over time. A few members also had concerns that if the measure could trigger based off of inpatient stays, then the measure would be capturing a more complex patient population. Acumen noted, however, that this clinical complexity could be accounted for in the measure's risk adjustment model. Based on workgroup member discussion, there was general agreement that the measure shouldn't trigger episodes based on inpatient stays, but that claims from inpatient stays should continue to be used as confirmation of a care relationship between a TIN and a patient.

Key Takeaways from Discussion and/or Polls for CPT/HCPCS Codes:

- The workgroup recommended to align with the current chronic condition measures and keep a 180-day trigger window for the measure.
- Members recommended adding advanced care planning, transitional care, chronic care management, and home health care CPT/HCPCS codes as outpatient E&M codes.
- The workgroup recommended adding patient education codes as condition-related CPT/HCPCS codes. (However, the Acumen team has found that there are currently no codes for this. Acumen will continue to monitor this area for future consideration.)
- During the meeting, the workgroup mentioned that the measure shouldn't trigger episodes based on claims from inpatient stays but should continue confirming episodes based on claims from inpatient stays. However, the workgroup voted to trigger and confirm episodes based on claims from inpatient stays. As such, Acumen will conduct additional testing and have further discussions with the workgroup to decide whether to trigger based off of inpatient stays.

2.2.2 Discussion of ICD-10 Diagnosis Codes

Members discussed the types of heart failure diagnoses that are used to identify trigger, confirming, and reaffirming claims for this measure. After discussing the potential tradeoffs between having a broad or narrow measure scope, the workgroup consensus was in favor of capturing both Heart Failure with Reduced Ejection Fraction (HFrEF) and Heart Failure with Preserved Ejection Fraction (HFpEF) in the measure. A few members raised concerns about removing either of these major sub-populations and said that the workgroup could decide how to handle these groups (i.e., through sub-groups or risk adjustment) once Acumen identifies suitable claims-based approaches to distinguish between patients with HFrEF and HFpEF.

The workgroup also discussed defining the patient population based on the position of the diagnosis on claims. One member asked whether the diagnosis has to be on the initial position or any position on the claim, raising concerns that if episodes are triggered based off of any coding position, then the measure will capture more services and costs. While the measure could be adjusted to pull diagnoses from specific positions, Acumen clarified that in non-institutional physician supplier claims, there's no primary / secondary distinction that impacts billing. The empirical analyses presented to the workgroup used the diagnosis array on claims to identify Heart Failure episodes.

Key Takeaways from Discussion and/or Polls for ICD-10 Diagnosis Codes:

- The workgroup recommended including both HFrEF and HFpEF episodes.
- The workgroup recommended including all preliminary diagnosis codes, with the exception of rheumatic valve disease codes.

2.3 Addressing Sub-Populations for Meaningful Clinical Comparison

Members also engaged in a detailed discussion about how to account for patient cohort heterogeneity among various sub-populations within the Heart Failure episode group. Sub-populations refer to patient cohorts as defined by their pre-existing conditions and characteristics. Workgroup members discussed: (i) Stratifying the patient population into mutually exclusive and exhaustive sub-groups to define more homogenous patient cohorts (Section 2.3.1),[4] (ii) Defining covariates in the risk adjustment model (Section 2.3.2),[5] (iii) Identifying measure exclusions (Section 2.3.3),[6] and (iv) Monitoring certain sub-populations for further testing.[7]

After Acumen provided a description of each method and presented analytic data on preliminary sub-populations (recommended or identified either through the literature scan, public comment, or Acumen clinical team), workgroup members discussed the patient sub-populations and their preferences for how to address them. Sections 2.3.1, 2.3.2, and 2.3.3 summarize the workgroup discussions and recommendations regarding sub-groups, risk adjustors, and exclusions, respectively; Section 2.3.4 provides the discussions and recommendations regarding how to address hospitalizations.

[4] Sub-grouping is a method that's intended for when we would want to compare episodes only with other similar episodes within the same sub-group. This approach is used when sub-groups are very different from one another, and each sub-group requires its own risk adjustment model. Since each sub-group will have its own risk adjustment model, the size of each sub-group should be sufficiently large.

[5] Risk adjusting is a method to account for the case-mix of patients and other non-clinical characteristics that influence complexity. It's meant to be used for sub-populations that make up a large share of patients who have a characteristic that's outside of the attributed clinician's reasonable influence. Risk-adjusted cost measures adjust observed episode spending to an expected episode spending (predicted by a risk adjustment model).

[6] Excluding is a method in which we exclude certain patients or episodes to address issues with patient heterogeneity. This approach should be used when the sub-population affects a small, unique set of patients in which risk adjustment wouldn't be sufficient to account for their differences in expected cost.

[7] Monitoring for further testing is an option for flagging certain sub-populations that the workgroup may revisit later during measure development upon review of further data. This approach is best used when the workgroup requests additional data or information on a sub-population to discuss the appropriate method for meaningful clinical comparison.

2.3.1 Sub-Groups

After the workgroup agreed that both HFrEF and HFpEF episodes should be captured in the measure's scope (Section 2.2.2), Acumen presented an analysis that compared 2 claims-based methods that were used to distinguish between HFrEF and HFpEF episodes: (i) Hierarchy, and (ii) Share. While the hierarchy method assigns HFpEF only when HFrEF isn't observed in a patient's claims, the share method uses their claims to assign a patient either a HFrEF or HFpEF diagnosis based on whether at least two-thirds of a patient's diagnosis codes indicate a particular condition. To assess each method's ability to distinguish between HFrEF and HFpEF episodes, this analysis used different claims-based indicators (services or medications) that are more commonly found in one of these sub-populations.

A few members said that they prefer the hierarchy method because its logic is more closely aligned with treatment prioritization in the clinical setting. In discussion, Acumen noted that findings from the analysis demonstrated that both methods seem to track with the expected treatment patterns for each identified condition. However, there are important caveats to both methods, with one member noting that administrative claims methods should be validated against data in electronic health records, such as ejection fraction (EF) readings. In response, another member cautioned against validating an approach using EF readings, because EF cut-offs vary and clinicians may move away from these readings as a tool to categorize heart failure patients. Acumen did note, however, that ICD-11 may start incorporating the granularity that's currently lacking in ICD-10 categorization. Moving forward, a member suggested "reverse engineering" a sub-grouping methodology by looking at treatment patterns that are more likely to be found among HFrEF or HFpEF patients (e.g., patients with implantable cardioverter defibrillators for HFrEF), then to combine that with other indicators to better refine identification of the sub-groups of interest.

<u>Key Takeaways from Discussion and/or Polls for Sub-Groups:</u>

- The workgroup recommended to sub-group the measure by HFrEF and HFpEF episodes.
- Generally, the workgroup agreed with our initial approaches to distinguish between HFrEF and HFpEF, but they said that we'll need to validate the approach that we choose. Additionally, most of the workgroup agreed with our current claims-based indicators of HFrEF and HFpEF, suggesting a few more indicators based on other comorbid diagnoses (e.g.., diabetes and obesity) and other pharmacotherapies (e.g., beta blockers and angiotensin-converting enzyme [ACE] inhibitors).

2.3.2 Risk Adjustors

The workgroup discussed which variables to include as risk adjustors, and the recommendations were gathered through the poll. They discussed the benefits of risk adjusting for certain clinician characteristics. First, members discussed potential risk adjustment variables that account for different practice types. For example, one workgroup member compared practices that have relatively more resources (i.e., large size, urban practices) to those with fewer resources (i.e., small size, rural practices), and asked whether the model could account for these differences in resources across practice type. Acumen responded that the measure's payment standardization methodology accounts for geographic differences across clinicians, but more adjustors could be added to refine the model. Additionally, members discussed the tremendous heterogeneity in the heart failure patient population and how to account for differences in patient complexity across different practice types. For example, advanced heart failure specialists typically treat more complex patients and have a different case-mix than general cardiologists. Acumen noted that we could explore identification of different clinician

types using billing patterns found in claims data, which could lead to a potential risk adjustment variable.

Key Takeaways from Discussion and/or Polls for Risk Adjustors:

- Overall, the workgroup voted to add the following risk adjustors:
    - Right heart failure
    - Substance abuse/cardiomyopathy
    - Rheumatic and other valve disease
    - Cardiomyopathy diagnosis codes
    - Idiopathic heart failure
    - Ischemic/coronary artery disease
- Sub-populations that didn't reach consensus will undergo further testing and will be discussed by the workgroup later on during measure development.

2.3.3 Exclusions

Members discussed how to exclude certain small groups of patients who have very different care needs from the overall patient cohort. In particular, a few members proposed excluding sub-populations that comprised less than 1% of patients or episodes. However, other workgroup members felt that this approach was arbitrary and that each of these sub-populations warranted discussion before their potential exclusion.

The workgroup discussed several sub-populations for potential exclusion and reviewed empirical analyses that Acumen prepared. There was some discussion about lumping in all types of heart failure etiologies into one measure versus excluding rare conditions, mainly for face validity. First, members proposed excluding patients with amyloidosis, as it's a rare and costly disease that requires different treatment than the overall patient cohort. However, other workgroup members were in favor of including these patients and accounting for them by risk adjusting for case-mix and patient severity. Second, members discussed excluding patients with end-stage renal disease (ESRD) or those that are on dialysis, since being on dialysis changes how heart failure patients are managed (i.e., medication management). Acumen noted that the current risk adjustment model includes ESRD as a risk adjustor and that after adjustment, these patients have similar costs compared to the rest of the patient cohort. This indicates that the risk adjustment model does well with accounting for the complexity of these patients. Third, one member suggested that the measure exclude patients with left ventricular assist devices (LVADs). In response, Acumen said that while it makes sense to exclude these patients because they're a relatively small patient population with distinct costs and services compared to other heart failure patients, we may want to think about how to address the cost of LVADs in future service assignment discussions. For example, while it's possible that an LVAD within 30 days of meeting a clinician may not be under their control, an LVAD after a clinician has cared for a patient for a year may be related to the clinician's care. Last, other sub-populations mentioned for potential exclusion are patients with heart transplants, pulmonary hypertension, hypertrophic cardiomyopathy, and those receiving hospice care.

Key Takeaways from Discussion and/or Polls for Exclusions:

- Overall, the workgroup didn't reach consensus on excluding any of the sub-populations.
- Sub-populations that didn't reach consensus will undergo further testing and will be discussed by the workgroup later on during measure development.

2.3.4 Hospitalizations

The workgroup had an extensive discussion on the different approaches for addressing heart failure patients who have been hospitalized. First, workgroup members discussed handling hospitalizations through the measure's service assignment rules by not including services within 30 days of a hospital discharge. This is because the hospital may be performing extra services to avoid readmitting the patient during this 30-day window and there's an inherently high risk of readmission that's out of the control of the outpatient clinician. Second, the workgroup suggested accounting for hospitalizations by adding risk adjustors that could account for the time from last hospitalization (e.g., 90 days before or within 7 days of the episode start date), the number of recent hospitalizations, and the severity of those hospitalizations. Lastly, members suggested excluding patients whose inpatient discharge is within a certain amount of time of their episode start date, so that the outpatient episode could begin with less influence from the recent hospitalization.

Key Takeaways from Discussion and/or Polls for Addressing Hospitalizations:

- While the workgroup couldn't reach consensus on how to treat heart failure patients who have been hospitalized, Acumen will conduct additional testing and members will explore different approaches later on during measure development.

2.4 Assigning Services to the Episode Group

Prior to the meeting, workgroup members participated in a survey that asked them to provide preliminary input on the types of services to assign for the Heart Failure measure. This input was intended to serve as the starting point for discussion during this session. However, due to prolonged discussions during earlier sessions, the workgroup was unable to review or comment on these preliminary categories. As such, Acumen asked the workgroup to provide input on these and other categories of assigned services in the Workgroup Webinar Poll. These categories will be discussed during the Service Assignment and Refinement (SAR) Webinar.

Key Takeaways from Discussion and/or Polls for Assigning Services to the Episode Group:

- Overall, the workgroup agreed with the following proposed categories of assigned services:
    - Rehabilitation
    - Telehealth/Remote Monitoring
    - Post-Acute Care
    - Palliative Care
    - Testing, Labs, and Imaging
    - Referrals
    - Nutrition Evaluation
    - Emergency Department Visits
    - Hospitalizations
    - Surgical Procedures
    - Medications
    - Durable Medical Equipment (DME)
- A few members had concerns about this list of proposed categories, including the following:
    - One member suggested removing palliative care, and another suggested finding a way to differentiate between patients that opt into true hospice palliative care services and early organized palliative involvement.
    - Another member had concerns about including DME, because they don't want to disincentivize clinicians from providing strongly-indicated devices (e.g., cardiac resynchronization therapy devices).

- One member suggested including transcatheter aortic valve replacement procedures under “Surgical Procedures,” and another member suggested including medication management services.
- Two members suggested including a category that captures routine care management services that are provided in an outpatient setting.

2.5 Next Steps

In the last session, Acumen provided an overview of the next steps. After the meeting, Acumen distributed the Workgroup Webinar Poll to gather input from members on the discussions held during the webinar. The survey also consisted of open comment boxes to provide additional thoughts on topics for PFP input and a space to share additional comments. Acumen will operationalize input for the measure specifications based on Workgroup Webinar Poll results and will follow up with workgroup members with more information about the next steps in the measure development process (i.e., scheduling for the SAR Webinars in late August / early September 2021).

3. Appendix: Overview of Workgroup Member Preparation and Shared Materials

3.1 Introduction

Section 3.2 provides an overview of materials shared with the workgroup members prior to the workgroup webinar, and Section 3.3 provides a recap of concepts of the measure development process presented by Acumen.

3.2 Overview of Meeting Materials

Prior to the meeting, workgroup members were provided with the following information to inform their discussions and votes:

- Agenda and Slide Deck, which was sent prior to the meeting and outlined the topics and process used for the webinar, including embedded empirical analysis results
- A Welcome Packet of materials providing an overview of Wave 4 of cost measure development and information on the measure frameworks
- Investigation workbook sent prior to the meeting, which presented detailed findings from empirical analyses:
    - A Sub-Population Analysis Workbook, which provided data on the frequency and cost associated with a preliminary set of sub-populations informed by public comments received and deliberations among the Acumen clinical team

The materials shared were based on analyses run on draft measure specifications that the Acumen clinical team created based on input from the Wave 4 measure development public comments and discussions with CMS.

3.3 Overview of Cost Measure Development

At the beginning of the meeting, Acumen presented an introductory session on the following topics:

- The activities done to date for the development of episode-based cost measures, including the Wave 4 measure development public comment period
- The goals of the meeting and timeline of activities for Wave 4
- A recap of the Quality Payment Program and episode-based cost measures for MIPS
- A recap on the different sources of information for the workgroup to consider in addition to their clinical expertise, including analyses and data, a literature review, and findings from the PFPs