Colon Resection Workgroup In-Person Meeting Summary

MACRA Episode-Based Cost Measures: Measure-Specific Workgroups
In-Person Workgroup Meeting, August 21, 2019
September 2019

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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 (MACRA) of 2015. Acumen's measure development approach involves convening clinician expert panels to provide input in cycles of development ("waves").[1] The four Clinical Subcommittees (CS) that convened in May-June 2019 for Wave 3 were focused on the following clinical areas: Chronic Condition and Disease Management, Dermatologic Disease Management, General and Colorectal Surgery, and Hospital Medicine.[2] These CS provided input on selecting episode groups for development in Wave 3 and the composition of smaller, targeted workgroups to build out the measure. Acumen convened the following workgroups[3] (each composed of approximately 15 members) in mid-August 2019 for in-person meetings: Diabetes, Asthma/Chronic Obstructive Pulmonary Disease (COPD), Melanoma Resection, Sepsis, and Colon Resection.

Colon Resection Workgroup Meeting, August 21, 2019

This meeting summary document outlines the purpose, discussion, and recommendations from the Colon Resection workgroup in-person meeting. Section 1 provides an overview of the

[1] For information on measure development in Waves 1 and 2 (2017 and 2018), refer to the Episode-Based Cost Measure Field Testing Measure Development Process document (https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/2018-measure-development-process.pdf)

[2] Members for these Clinical Subcommittees were recruited through a public nomination period from March 11 to April 12, 2019.

[3] Members for these workgroups were recruited from within the CS as well as a standing pool of nominees between June and July, 2019.

meeting 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 at the beginning of the meeting as preparation for discussion on detailed measure specifications.

1. Overview

The goals of the Colon Resection workgroup meeting that convened on August 21, 2019, were to provide detailed recommendations on the following:

(i) Episode group trigger codes and scope
(ii) How to account for sub-populations of the patient cohort to ensure that the measure allows for meaningful clinical comparisons (either as episode group sub-groups, variables to include in the risk adjustment model, measure-specific exclusions, or sub-populations to monitor for future testing and consideration)
(iii) Episode window length
(iv) Categories of services that are associated with the clinician's role in managing the procedure and that should be assigned to the episode group (i.e., included as costs in the cost measure)

The meeting was held in Washington, DC, and attended by 13 of 18 workgroup members (12 attended in person and 1 via webinar). The meeting was facilitated by an Acumen moderator, Walter Park. The Colon Resection workgroup chair was Walter Peters, who also facilitated meeting discussions, and the General and Colorectal Surgery CS co-chairs were Alice Coombs and Guy Orangio. The MACRA Episode-Based Cost Measure Workgroup Composition List contains the full list of members, including names, professional roles, employers, and clinical specialties.[4]

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 meeting, workgroup members were provided with information and materials to inform their meeting discussions (see Section 3). During and after the meeting, workgroup members were polled on their preferences to ensure the measures are developed based on well-documented stakeholder input. Mirroring National Quality Forum practices, the threshold for recommendations was >60% consensus. 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 an initial step of the measure development process to gather expert clinical input; as such, these are preliminary discussions and materials, which do not represent any final decisions about the measure specifications or MIPS.

2. Summary of Discussion

This section is organized based on meeting sessions and describes workgroup member discussions and recommendations on each topic: defining episode group scope and trigger

[4] For a list of Colon Resection workgroup members in Wave 3, please download the MACRA Episode-Based Cost Measures Measure-Specific Workgroup Composition (Membership) List available on the MACRA Feedback Page (https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/2019-workgroup-comp-list.pdf)

codes, addressing patient cohort sub-populations to ensure meaningful clinical comparison, and assigning clinically-related services to the episode group.

2.1 Defining the Episode Group

In this session, Acumen reviewed the framework for an episode group and provided an overview of triggering methodologies. Section 2.1.1 provides a summary of the discussion of the preliminary Medicare Severity-Diagnosis Related Group (MS-DRG) and Current Procedural Terminology (CPT) / Healthcare Common Procedure Coding System (HCPCS) trigger codes recommended by members of the CS or identified by Acumen clinicians as being potential colon resection episode group triggers. While triggers for procedural measures center primarily around CPT/HCPCS procedure codes, both MS-DRG and CPT/HCPCS codes were discussed given that procedures which occur during an inpatient stay must have a relevant MS-DRG (i.e., the procedure must not occur during *any* inpatient stay but instead must occur concurrent to an inpatient stay with an MS-DRG code that is *relevant* to the procedure) along with the pertinent CPT/HCPCS code in order to trigger an episode.

The discussion on episode group triggers began by reviewing the preliminary list of colon resection trigger codes. However, preliminary analyses indicate that the episode group as specified using this preliminary list of colon resection trigger codes exhibits low coverage (in terms of episode counts, patient coverage, and provider coverage), which could affect the statistical reliability of the measure and therefore overall utility of the measure. Section 2.1.2 provides a summary of the discussion of additional CPT/HCPCS trigger codes and relevant MS-DRGs Acumen proposed as a possible method to expand the episode group with aims to improve the technical integrity of the measure.

2.1.1 Discussion of Preliminary Colon Resection Trigger Codes

The workgroup suggested removing two types of CPT/HCPCS trigger codes from the preliminary list—add-on codes and unlisted procedure codes. Members voted to remove splenic flexure mobilization add-on codes, which are not independently reportable, since episodes triggered by these codes alone would result from a coding error and would not be compatible with the intent of the overall measure. They also noted that adding these codes could potentially incentivize surgeons to forgo splenic flexure mobilizations even when warranted to prevent post-operative complications such as anastomotic leaks. Members also favored removing the unlisted laparoscopic procedure CPT/HCPCS trigger code since this code could potentially capture a wide range of procedures, including small bowel procedures, which they deemed beyond the scope of the measure.

<u>Key Takeaways from Discussion and/or Polls for Initial Colon Resection Trigger Codes</u>

- The workgroup recommended removing add-on codes and unlisted procedure codes from the list of episode triggers.
- The workgroup agreed with all other initial CPT/HCPCS trigger codes and relevant MS-DRGs.

2.1.2 Discussion of Measure Scope/Additional Trigger Codes

Given the low initial coverage for colon resection, Acumen proposed options to expand the scope of the measure which included adding additional trigger codes mainly comprised of rectal resection CPT/HCPCS codes and relevant MS-DRGs, as well as a few codes related to other bowel procedures (e.g., small bowel procedures). The workgroup approached the measure scope expansion option to include rectal procedures from both a conceptual and more granular level in terms of trigger codes.

Conceptual Discussion on Measure Scope

Members cited several benefits in support of expanding the measure's scope. They reasoned that the episode group would be larger and would therefore capture greater variability in the complexity and cost of care provided, which aligns with the General and Colorectal Surgery CS's reasoning that the variability in clinical care for colon resection provides an opportunity to change practice patterns. Members also noted that excluding rectal procedures from the measure would negatively impact colorectal surgeons who predominantly perform rectal procedures since they would have a limited number of eligible cases. Opposing arguments cited the added complexity this would entail for both technical measure development considerations (e.g., ensuring meaningful clinical comparison) and the pace at which change is effected in clinical practice. To address the latter, a suggestion was made to expand the scope of Colon Resection as part of a staged process in which the measure is revised at a later time to include rectal trigger codes.

<u>Key Takeaways from Discussion and/or Polls for Scope</u>

- The workgroup ultimately voted to expand the measure's scope during the initial measure development process given the possibility of addressing the technical considerations through risk adjustment.

Additional Trigger Code Discussion

Once the workgroup reached a consensus to expand the scope of the measure, members proceeded to discuss specific CPT/HCPCS trigger codes and relevant MS-DRGs from an initial starting list of rectal codes/additional codes prepared by Acumen clinicians and CS co-chairs. During this process, the workgroup aimed to select trigger codes that are qualitatively aligned with the original intent of the measure.

The workgroup suggested that three rectal resection MS-DRGs ought to be considered relevant MS-DRGs should rectal procedure codes occur during an inpatient stay but to not include MS-DRG codes for small bowel and anal & stomal procedures. Members argued that including MS-DRGs for procedures other than rectal resections could add too much complexity to the measure development process and could undermine the measure's face validity.

The workgroup recommended removing several types of CPT/HCPCS from the list of additional trigger codes. Codes for procedures that differ substantially from colon resections (e.g., Kraske type procedures) or are associated with a lower morbidity risk or pain were suggested to be removed. A code used for multivisceral resections was recommended for removal because workgroup members considered such procedures to be beyond the measure's scope. Members also highlighted codes that may be of limited relevance for the Medicare population since they are most applicable for pediatric indications.

The workgroup went on to debate whether to include both laparoscopic rectal prolapse repair CPT/HCPCS trigger codes (i.e., rectopexy codes) since only one code captured procedures with rectal resections. This discussion led members to consider the broader question of whether to include codes for procedures without resections. They ultimately recommended including both laparoscopic rectal prolapse repair codes, justifying that capturing the two procedures would allow the measure to differentiate between providers in terms of their clinical judgement. In contrast, they highlighted two ostomy procedure codes that do not entail resections for removal since they are diverting codes; therefore, including them would not have the same benefit as adding both rectopexy codes. The workgroup also initially proposed removing a code typically billed for the Altemeier procedure, which was described as a less favorable alternative

to a sigmoid resection with rectopexy for the Medicare population, but decided against this since capturing different approaches to treating rectal prolapse would further improve the measure's ability to differentiate between providers in terms of their clinical judgement.

Key Takeaways from Discussion and/or Polls for Additional Trigger Code Discussion

- The workgroup recommended adding a curated list of rectal procedure CPT/HCPCS codes as triggers and relevant rectal MS-DRGs to the episode group on the condition that rectal procedures are considered for statistical adjustment (i.e., to be further discussed for potential sub-grouping or risk adjustment during discussions of sub-populations).

2.2 Addressing Patient Sub-Populations for Meaningful Clinical Comparison

Members also held detailed discussions about how to account for various sub-populations within the Colon Resection episode group. Sub-populations are patient cohorts as defined by particular characteristics. To ensure meaningful clinical comparisons, specific sub-populations/patient cohorts can be handled in the following ways: (i) stratifying the episode group into mutually exclusive and exhaustive sub-groups to define more homogeneous patient cohorts, (ii) including as a variable in the risk adjustment model, (iii) excluding the sub-population from the measure, and (iv) monitoring and testing the sub-population for future consideration.

After Acumen provided a description of each method and presented analytic data on preliminary sub-populations (recommended either by the CS or Acumen clinicians to create a comprehensive list of initial cohorts of interest for consideration in the meeting), workgroup members discussed their preferences for how to address each patient cohort, and completed a post-discussion Sub-Population Poll during the meeting.

2.2.1 Sub-Groups

The workgroup recommended creating a sub-group comprised of rectal and anal cancer patients as well as rectal procedures to account for the excess risk associated with these sub-populations. In other words, the two sub-groups would be (i) episodes involving a rectal cancer diagnosis or procedure, and (ii) all other episodes triggered by the list of codes that do not involve a rectal cancer diagnosis or procedure. This means that the rectal cancer cases and procedures can be separated from the larger group which also includes colon resection and only compared against one another. Members recommended omitting the laparoscopic rectal prolapse procedures from the rectal sub-group given that they are often less complex and lower risk compared to rectal procedures performed subsequent to malignant diagnoses. They also suggested that episodes triggered by the low anterior resection (LAR) codes should only be included in the rectal sub-group for patients who have a rectal cancer diagnosis given the variable use of these codes across providers (e.g., providers who perform a complete sigmoid resection with an anastomosis to the rectum on a patient diagnosed with diverticular disease might also code for an LAR).

The workgroup also considered sub-grouping based on colon cancer diagnosis but ultimately decided against this, justifying that costs associated with colon resection should not differ by disease etiology if services unique to cancer diagnoses are not assigned to the episode group. As such, these cases can be lumped together in the "all other episodes" category with other colon resection cases and episodes not captured in the rectal sub-group.

Key Takeaways from Discussion and/or Polls for Sub-Groups

- The workgroup recommended the following sub-groups:
    - Rectal and anal cancer or rectal procedures (excluding laparoscopic rectal prolapse repairs)
    - All other episodes

2.2.2 Risk Adjustors

Workgroup members considered several sub-populations for risk adjustment. Members recommended adding a risk adjustment variable for secondary anastomosis on the condition that the sub-population is renamed and the specifications revised to capture procedures in which an ostomy is present at the end of the index procedure as opposed to procedures that end in an anastomosis. They reasoned that patients with an ostomy are likely to require more expensive care (e.g., greater use of home health (HH) services). They considered monitoring partial laparoscopic colectomies for testing, contrasted by the partial open colectomy sub-population, since risk adjusting could potentially penalize surgeons who perform more complex procedures laparoscopically. However, they ultimately voted to risk adjust for this sub-population given that some clinicians may not have control over the decision to perform an open or a laparoscopic colectomy. Members also suggested risk adjusting for recent percutaneous coronary intervention (PCI), noting that it is a more expensive sub-population compared to the overall population. Concurrent major abdominal surgery was recommended for risk adjustment since it is likely a marker of a clinically complex case, possibly requiring synchronous organ resection. Members reasoned that the recent receipt of HH services should be designated as a risk adjustor since the use of HH services prior to the index procedure is likely a predictor of post-operative HH service use, and as evidenced by the literature, patients who use such services tend to be more expensive in aggregate, even if HH service use can reduce the cost of care for patients at the individual level. The workgroup recommended recent all-cause admission in prior 30 days and recent all-cause admission in prior 120 days for risk adjustment because the literature reports that frequent hospital admissions are associated with greater health risks. Members felt that risk adjusting for recent myocardial infarction (MI) could improve the measure's face validity despite the sub-population's lower than average risk adjusted cost. Finally, they suggested risk adjusting for emergent colectomies and inflammatory bowel disease (IBD) diagnosis since these two sub-populations are likely to require a total colectomy.

Members discussed but ultimately did not reach a consensus in favor of adding risk adjustment variables for a few sub-populations. For example, the workgroup considered disaggregating the secondary anastomosis sub-population by ostomy type given the differing post-operative care needs of patients who undergo Ileostomies and colostomies, respectively. However, they reasoned that the choice to perform an ileostomy as opposed to a colostomy is often entirely at the surgeon's discretion.

<u>Key Takeaways from Discussion and/or Polls for Risk Adjustors</u>

- The workgroup recommended adding risk adjustment variables for the following sub-populations:
    - Primary anastomosis
    - Secondary anastomosis
    - Partial laparoscopic colectomy
    - Recent PCI
    - Concurrent major abdominal surgery
    - Recent receipt of HH services
    - Recent all-cause admission in prior 30 days
    - Recent all-cause admission in prior 120 days

- Recent MI
- Emergent colectomy
- IBD

2.2.3 Exclusions

Workgroup members discussed whether to exclude four sub-populations. Given the limited number of patients who receive Left Ventricular Assist Devices (LVADs) as well as the limited number of institutions in which procedures to insert these devices are performed, the workgroup voted to exclude the LVAD sub-population. Members suggested excluding the cohort of patients who undergo major bowel surgery shortly before the trigger event given that this is likely an indication of a staged procedure, and it would be difficult to differentiate between procedures staged as a result of complications and emergent procedures that require staging. Instead they recommended handling this as part of the assigned services discussion (Section 2.3) such that the cost of subsequent surgeries are assigned to the episode if a procedure becomes staged as a result of complications, if feasible to identify from a technical standpoint; this way, the measure can adequately capture variations in cost of care without penalizing surgeons who have limited influence over the choice of whether or not to stage a procedure. Finally, in order to align with other bundled payment programs, the workgroup suggested excluding the sub-population of patients transferred within three days prior to admission to avoid incentivizing institutions to transfer or turn away complex cases.

During the initial discussion in which the workgroup considered expanding the measure's scope, some members briefly suggested excluding the sub-population of patients who are diagnosed with rectal or anal cancer due to the marked difference between them and the broader population of patients who undergo colon resections. The workgroup ultimately recommended sub-grouping for, rather than excluding, rectal and anal cancer patients given that this sub-population comprises a reasonable number of episodes (eight percent of the covered episodes) to avoid further reducing coverage. Members noted that excluding this group would also mean excluding episodes triggered by the LAR CPT/HCPCS codes since most of the episodes triggered by these codes likely involve patients with a rectal cancer diagnosis and that the variable use of these codes across providers could further reduce coverage.

<u>Key Takeaways from Discussion and/or Polls for Exclusions</u>

- The workgroup recommended excluding the following sub-populations from the measure:
  - LVAD
  - Recent major bowel surgery
  - Transfer within three days prior to admission

2.2.4 Monitor for Testing

Workgroup members suggested monitoring for the presence of concurrent interventional radiology (CPT/HCPCS code 37244) sub-population for future testing and consideration given the possible relevance of services billed under this code to quality of care (e.g., a percutaneous intervention to address a surgical complication). They also recommended monitoring the ASA Class One, Two, Three, and Four sub-populations for testing because of the seemingly imprecise coding of these classes in claims data, as evidenced by the low episode counts for these sub-populations. Although they initially considered risk adjusting for total colectomies because of the higher average cost associated with this sub-population compared to the overall population, they ultimately voted to monitor total colectomies for testing, reasoning that risk

adjusting for emergent colectomies and IBD diagnosis should be sufficient to account for this excess cost.

Key Takeaways from Discussion and/or Polls for Monitor Variables

- The workgroup recommended monitoring the following sub-populations for testing:
    - Total colectomy
    - Presence of concurrent interventional radiology (CPT/HCPCS code 37244)
    - ASA Class One
    - ASA Class Two
    - ASA Class Three
    - ASA Class Four

2.3 Assigning Services to the Episode Group

Acumen described the purpose of service assignment so that members could identify and discuss which services associated with the clinician's role in managing the condition should be included in the cost measure. These assigned services should be inclusive enough to identify a measureable performance difference between clinicians but also not introduce excessive noise. Acumen also re-introduced the concept of the episode window to facilitate this session's discussion. Section 2.3.1 presents the discussion of episode window length, and Section 2.3.2 summarizes the assigned services discussion.

2.3.1 Discussion of Episode Window

Episode windows consist of both a pre-trigger period and a post-trigger period, and workgroup members considered and discussed the timeframe for both during the workgroup meeting. The workgroup first debated the necessity of a pre-trigger period, with some members asserting that the measure's greatest opportunity to effect change in clinical practice would likely be related to post-operative care such as through the prevention of unnecessary readmissions, and hypothesizing that the overwhelming majority of patients receive a standard set of services; therefore, capturing these services would not contribute to the measure's ability to differentiate between providers in terms of cost-effectiveness. However, during their discussion of specific services, the workgroup identified several that would be relevant to assign to the pre-trigger period (e.g., diagnostic test and procedure-related services) and ultimately recommended a pre-trigger period of 15 days.

Workgroup members also debated whether the post-trigger period should span 45, 60, or 90 days. The workgroup ultimately recommended a 90-day post-trigger period to align with the post-operative global surgery period. Members who initially suggested shorter post-trigger periods expressed that it was unlikely for a surgeon to be involved in a patient's care 45 days after the index procedure. This shorter 45-day period was also contested with regards to the surgeon's role, but members were able to identify several complications that could occur between 30 and 45 days after the index procedure, which may be relevant to the surgeon (e.g., bowel obstruction or dehydration from a stoma). Members also noted that the surgeon could still be involved in caring for post-operative complications that happened earlier in the post-trigger period.

Key Takeaways from Discussion and/or Polls for Episode Window

- Pre-trigger period: 15 days
- Post-trigger period: 90 days

2.3.2 Discussion of Assigned Services

Approximately four weeks prior to the workgroup meeting, workgroup members had participated in an optional *Categories of Assigned Services Survey* to provide preliminary input on the types of services to assign to the episode group. This was intended to serve as the starting point for discussion during this portion of the session. During the meeting, workgroup members provided details on which specific services to assign within 43 broad categories. Workgroup members also had the ability to customize the pre- and post-trigger period for each category of assigned services that is assigned.

The workgroup discussed a number of services that should be assigned to the episode group. Within the category of gastrointestinal diagnostic and surgical procedures, members suggested assigning colonoscopies exclusively within 90 days after the trigger event because of the inability to determine the surgeon's intention for performing a pre-operative colonoscopy from claims data as well as upper endoscopies performed within 30 days of the trigger event since this would likely indicate a surgical complication. Members suggested assigning services related to anesthesia for pain within 45 days of the post-trigger period to capture complication-specific secondary procedures, which aligns with the discussion surrounding the exclusion of the patient cohort that recently underwent major bowel surgery (section 2.2.3). Services related to PT, OT, SLP, and rehabilitation/aftercare were suggested for the post-trigger period given the positive impact of skilled-nursing facility, home health, and inpatient rehabilitation services on the patient's quality of life and readmission rates. Members specifically noted nursing visits as well as evaluation and management services for assignment. They also stressed the importance of capturing telehealth services within this category. The workgroup suggested assigning services associated with the treatment of acute pulmonary conditions within 15 days of the post-trigger period since this would indicate that the condition was likely acquired during the inpatient stay.

The workgroup also considered other services that should be assigned to the episode group. Although members initially suggested not assigning radiologic imaging services to the pre-trigger window due to the variability in the frequency and timing of these services across sub-populations, they ultimately recommended several services for assignment such as pre-operative imaging for surgical clearance given their relevance to the trigger event. Imaging services that occur within 30 days of the post-trigger period were also recommended for assignment. Members recommended assigning dehydration-related services to the post-trigger period to capture complications associated with stomas. In contrast, they suggested leaving out stoma closures in order to avoid unintended consequences such as surgeons who are unable to perform a reversal due to complications falsely appearing to be more cost-effective or incentivizing surgeons to wait until the end of the post-trigger period to close a stoma, which would not be in the patient's best interest. The workgroup suggested not assigning cancer therapy-specific services (e.g., chemotherapy and port placement) given that only a small proportion of patients covered by the episode group have cancer diagnoses. Members initially considered not assigning services performed at previous institutions from the episode group to avoid the unintended consequences that may arise from capturing transfer cases; however, they ultimately decided that it might not be possible to adequately exclude all services from a prior hospitalization using service assignment rules and decided to exclude the sub-population.

<u>Key Takeaways from Discussion and/or Polls for Categories of Assigned Services</u>

- The workgroup recommended assigning several services within the following categories (omitting stoma closures and cancer therapy-specific services):
    - Gastrointestinal diagnostic and surgical procedures
    - Radiologic imaging services
    - Anesthesia (pain)

- Dehydration-related services
- PT, OT, SLP, and rehabilitation/aftercare
- Acute pulmonary condition

Workgroup members provided their input on these categories of assigned services as well as other categories of assigned services that they did not have time to fully discuss during the meeting in a follow-up survey after the meeting. Acumen clinical and technical teams will take into consideration these results in producing a draft set of measure specifications for future refinement.

2.4 Next Steps

In the final session, Acumen provided an overview of the next steps in the measure development process. Acumen will gather and review the input provided during the workgroup meeting's discussions and polls to create draft measure specifications. These can then be used for future testing and potential measure refinement.

After the meeting, Acumen distributed the *Workgroup Meeting Follow-Up Survey* to gather input from members on episode window and services assignment, which were discussed during one of the last sessions of the meeting. The survey also consisted of open comment boxes, including a question about the patient, family, and caregiver perspective.

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

Section 3.1 provides an overview of materials shared with the workgroup members prior to the meeting. Section 3.2 provides a recap of the main concepts of the measure development process and measure framework presented by Acumen. Section 3.3 presents various stakeholder input and research from a brief literature review conducted by Acumen that workgroup members could consider.

3.1 Overview of Meeting Materials

One week prior to the meeting, workgroup members were provided with the following information to inform their discussions and votes during the meeting:

- *Analytic Key Findings Document*, which summarized a selection of high-level key findings from empirical analyses ("investigations")
- Investigation workbooks presenting detailed findings from empirical analyses:
    - *Sub-Population Summary Investigation Workbook*, which reported on the frequency and cost associated with an initial set of potential sub-populations suggested by Clinical Subcommittee members during and after their May-June meetings and by Acumen internal clinicians to serve as a starting point for workgroup member discussions
    - *Candidate Services Over Time Investigation Workbook*, which contained information on frequency, cost, and timing for up to 200 of the most commonly performed services before and after a trigger event to inform discussions on service assignment
    - *Clinician Attribution Investigation Workbook*, which provided the frequency and cost of episodes attributed to (i) individual clinicians (identified by TIN-NPI) by HCFA specialty and (ii) clinician groups (identified by TIN) by the TIN size
    - *Inpatient Cost Variability Investigation Workbook*, which provided statistics demonstrating the variability of the following types of cost: (i) episode cost, (ii) trigger inpatient stay cost, and (iii) post-acute care cost across procedure type, total or partial colectomy, and primary disease cause
    - *Partial Procedures Investigation Workbook*, which provided statistics on the cost and frequency of partial and total colectomy procedures in Colon Resection episodes
- *Literature Review/Quality Alignment Document*, which was an environmental scan that provided an overview of (i) opportunities for improvement for the cost measure identified through the literature, and (ii) quality measures with potential for alignment
- *Person and Family Committee (PFC) Findings*, which summarized input from the PFC regarding patient and caregiver perspectives

The materials shared were based on analyses run on triggering methodologies using preliminary trigger codes and specifications, which will be revised during measure development.

3.2 Overview of Cost Measure Development and Framework

In the beginning of the meeting, Acumen presented a short introductory session to cover the following topics:

- Role of episode-based cost measures within the context of the cost performance category of MIPS
- Recap of measure development to-date with 19 acute inpatient medical condition and procedural episode-based cost measures developed

    - Eight of these are currently used in the 2019 MIPS performance period alongside two broader cost measures that have been in use since the 2017 performance period: Medicare Spending Per Patient and Total Per Capita Cost
- Details of Acumen's measure development approach, which includes stakeholder input throughout, including a guiding Technical Expert Panel (TEP), CS and workgroups providing detailed clinical input, and a Person and Family Committee (PFC) providing patient and caregiver perspectives[5]
- Overview of Wave 3 CS structure and input on cost measure components, which include defining an episode group, attributing episodes to clinicians, assigning costs, risk adjusting, and aligning cost with quality

Acumen also introduced the episode-based cost measure framework, covering the following topics:

- The types of episode-based cost measures (acute inpatient medical condition, procedural, and chronic condition)
- The five essential components of episode-based cost measures (defining the episode group, attributing the episode group to clinicians, assigning costs to the episode group, risk adjusting episode groups, and aligning cost with quality) along with an example illustration of how the episodes work
- The steps for construction of an episode-based cost measure and goals that cost measures are meant to accomplish
- Information on the various types of data, literature, and stakeholder input that is considered in the development of episode-based cost measures

3.3 Overview of Stakeholder Input and Literature Review

Prior to discussion on measure specifications, Acumen presented additional information for workgroup members to consider, including existing literature that identifies opportunities to improve cost performance and care outcomes and a list of quality measures for potential alignment consideration.

Additionally, the Westat team provided a summary of the PFC input on cost measure development. The PFC was a focus group of Medicare patients and caregivers that shared their feedback and perspectives regarding care management for procedures and clinician cost performance.

Please contact **Acumen MACRA Clinical Committee Support** at macra-clinical-committee-support@acumenllc.com if you have any questions. If you are interested in receiving updates about MACRA Episode-Based Cost Measures, please complete this Mailing List Sign-Up Form to be added to our mailing list.

[5] Additional detail on the measure development process and stakeholder roles is available on the MACRA Feedback Page within the Episode-Based Cost Measure Field Testing Measure Development Process document (https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/2018-measure-development-process.pdf)