

October-November 2018 Field Testing Feedback Summary Report for MACRA Cost Measures:

- **Episode-Based Cost Measures**
 - Acute Kidney Injury Requiring New Inpatient Dialysis
 - Elective Primary Hip Arthroplasty
 - Femoral or Inguinal Hernia Repair
 - Hemodialysis Access Creation
 - Inpatient Chronic Obstructive Pulmonary Disease (COPD) Exacerbation
 - Lower Gastrointestinal Hemorrhage
 - Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels
 - Lumpectomy, Partial Mastectomy, Simple Mastectomy
 - Non-Emergent Coronary Artery Bypass Graft (CABG)
 - Psychoses/Related Conditions
 - Renal or Ureteral Stone Surgical Treatment
- **Revised Measures**
 - Medicare Spending Per Beneficiary (MSPB) clinician
 - Total Per Capita Cost (TPCC)

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Executive Summary

The Centers for Medicare & Medicaid Services (CMS) and Acumen, LLC (referred to as “Acumen”) conducted field testing for 11 newly developed episode-based cost measures and two revised cost measures from October to November 2018. The episode-based cost measures were developed with extensive input from stakeholders through the Clinical Subcommittees, measure-specific workgroups, a Technical Expert Panel (TEP), and public comment. The two revised cost measures were refined with substantial stakeholder feedback, including from the TEP and an expert workgroup. Through field testing, clinicians and other stakeholders had an opportunity to provide feedback on the measure specifications and the field test report template for all 13 cost measures. Field testing also served as an opportunity for clinicians to learn about episode-based cost measures and revised measures, and gain experience with the cost measures before consideration of their potential use in the Quality Payment Program.

Acumen received 67 survey comments from stakeholders during the field testing feedback period, including 25 comment letters. Acumen and CMS hosted a MACRA Cost Measures Field Testing Webinar on October 9, 2018 to engage clinicians and other stakeholders during field testing. The webinar consisted of an hour-long presentation outlining: (i) the cost measure field testing project, (ii) the measure development and re-evaluation processes, and (iii) field testing activities. The presentation was followed by a 30-minute feedback session where attendees could ask questions or provide comments. In total, there were approximately 400 attendees and around 85 comments and questions were received during the feedback session.

The following list synthesizes some of the key points that were raised through the field testing feedback period:

- *Stakeholder engagement and involvement remains an important aspect of the measure development process.* Stakeholders expressed appreciation for the opportunity to provide feedback during field testing and for CMS’ continued efforts to involve them in the measure development process. Commenters also valued the decision to operationalize previously collected feedback, as demonstrated through the addition of measure-specific workgroups to the development process.
- *Field test reports present useful information for understanding clinician performance, though reduced complexity could encourage more clinician participation.* Stakeholders praised the presentation and content of the field test reports. However, the complexity of the information presented in the reports was a challenge for some stakeholders.
- *Improved supplemental field testing materials are helpful but can be further refined.* Some stakeholders found the supplemental field testing materials to be informative and thorough, providing useful information on field testing and the specifications of the cost measures. However, many noted that although the materials are comprehensive, they remain lengthy and complex, and they believe the amount of information provided is too overwhelming to be useful.
- *Ample time for review of field testing reports and materials is vital to collecting meaningful stakeholder feedback.* Some stakeholders suggested the field testing period

be extended or kept open, given the large amount and complexity of the information that was presented.

- *Transparent Clinical Subcommittee and measure-specific workgroup selection and voting encourages buy-in from stakeholders.* Some stakeholders expressed concern with the selection and voting processes for the Clinical Subcommittees and workgroups, highlighting that a transparent approach to member selection would ensure an appropriate mix of specialties and clinician types.
- *Field test report access continues to present challenges for stakeholders.* Some stakeholders noted that they faced difficulties creating accounts and downloading their field test reports from the CMS Enterprise Portal and these challenges may have negatively impacted the number of clinicians that were able to participate in field testing. Stakeholders urged CMS to communicate directly with clinicians receiving field test reports and to find an alternative for delivering and accessing the reports.

1.0 Overview

The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) established the Quality Payment Program. Under the Quality Payment Program, clinicians are incentivized to provide high-quality and high value care through Advanced Alternative Payment Models (APMs) or the Merit-based Incentive Payment System (MIPS). MIPS eligible clinicians will receive a performance-based adjustment to their Medicare payments. This payment adjustment is based on a MIPS final score that assesses evidence-based and practice-specific data in the following categories:

1. Quality
2. Cost
3. Improvement Activities
4. Promoting Interoperability (formerly Advancing Care Information)

MACRA requires that cost measures implemented in MIPS include consideration of care episode groups and patient condition groups (referred to as “episode groups”). The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen to develop episode groups and cost measures for the MIPS cost performance category through the *MACRA Episode Groups and Cost Measures* contract (HHSM-500-2013-13002I/HHSM-500-T0002).

CMS and Acumen conducted field testing for 11 newly developed episode-based cost measures and two revised cost measures from October 3 to November 5, 2018.¹ The episode-based measure were developed with input from 10 Clinical Subcommittees and 11 measure-specific workgroups that selected episode groups to develop into cost measures and provided input on measure specifications from April 2018 to December 2018. The measure-specific workgroups for the 10 Clinical Subcommittees, listed in Table 1 below, contributed to the development of the 11 episode-based cost measures.

¹ The field testing period was extended from the original deadline of October 31, 2018.

Table 1. Wave 2 Clinical Subcommittees and Episode-Based Cost Measures Developed

Wave 2 Clinical Subcommittee	Episode-Based Cost Measure (Developed by Workgroup)
Cardiovascular Disease Management	Non-Emergent Coronary Artery Bypass Graft (CABG)
Gastrointestinal Disease Management – Medical and Surgical	Femoral or Inguinal Hernia Repair
	Lower Gastrointestinal Hemorrhage
Musculoskeletal Disease Management – Non-Spine	Elective Primary Hip Arthroplasty
Musculoskeletal Disease Management – Spine	Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels
Neuropsychiatric Disease Management	Psychoses / Related Conditions
Oncologic Disease Management – Medical, Radiation, and Surgical	Lumpectomy, Partial Mastectomy, Simple Mastectomy
Peripheral Vascular Disease Management	Hemodialysis Access Creation
Pulmonary Disease Management	Inpatient Chronic Obstructive Pulmonary Disease (COPD) Exacerbation
Renal Disease Management	Acute Kidney Injury Requiring New Inpatient Dialysis
Urologic Disease Management	Renal or Ureteral Stone Surgical Treatment

The second set of measures that were field tested included two cost measures that underwent re-evaluation, with input from a TEP, an expert workgroup, and public comment:

- Medicare Spending Per Beneficiary (MSPB) clinician²
- Total Per Capita Cost (TPCC)³

During field testing, clinicians and clinician groups that met the criteria outlined in Table 2 below for any of the 11 episode-based cost measures or two revised cost measures had the opportunity to view a field test report on the CMS Enterprise Portal with information about their performance. In summary, during field testing, a total of 20,443 field test reports were downloaded from the CMS Enterprise Portal. 18,901 of the reports downloaded were at the TIN-NPI level and 1,542 reports were at the TIN-level. Episode-based cost measure field test reports accounted for 2,388 of the downloaded reports, while MSPB clinician accounted for 5,153 reports and TPCC accounted for 12,902 reports.

² The revised MSPB clinician measure that was field tested in October-November 2018 is separate from the reporting of the MIPS MSPB measure for the 2017 to 2019 MIPS performance periods. For clarity, we differentiate the MSPB measure currently in use in MIPS from the revised MSPB measure by name. “MSPB” alone refers to the measure currently in use and “MSPB clinician” refers to the revised measure.

³ The revised TPCC measure that was field tested in October-November 2018 is separate from the reporting of the existing TPCC measure for the 2017 to 2019 MIPS performance periods. The existing TPCC measure is sometimes referred to as “Total Per Capita Cost for All Attributed Beneficiaries.” For clarity in this document, we differentiate the TPCC measure currently in use in MIPS by referring to it as the “existing” or “current” MIPS TPCC measure.

Table 2. Field Test Report Information

Cost Measure Being Field Tested	Criteria to Receive a Field Test Report	Measurement Period
11 Newly Developed Episode-Based Cost Measures	10 episodes for at least one of the 11 episode-based cost measures	January 1, 2017 to December 31, 2017
Medicare Spending Per Beneficiary (MSPB) clinician	35 episodes	January 1, 2017 to December 31, 2017
Total Per Capita Cost (TPCC)	20 beneficiaries	October 1, 2016 to September 30, 2017 ⁴

The purpose of field testing is to provide a voluntary opportunity for clinicians and other stakeholders to provide feedback on: (i) the draft measure specifications, (ii) the field test report template, and (iii) all accompanying documentation. Stakeholders were invited to provide feedback through an online survey for the duration of field testing, where they also had the option to attach a PDF or word document version of their comments.⁵ Clinicians or stakeholders that did not receive a report were encouraged to provide feedback on publicly available field testing materials and documentation that included: (1) draft measure specifications, (ii) mock field test reports, and (iii) supplemental documentation.⁶ In total, Acumen received 67 survey responses, including 25 comment letters. The list of stakeholders who submitted a comment is provided in Appendix B.

Acumen and CMS hosted the MACRA Cost Measures Field Testing Webinar on October 9, 2018 to engage clinicians and other stakeholders during field testing.⁷ The webinar consisted of an hour-long presentation outlining (i) the cost measure field testing project (ii) the measure development and re-evaluation processes, and (iii) field testing activities. The presentation was followed by a 30-minute feedback session where attendees could ask questions or provide comments. In total, there were approximately 400 attendees and around 85 comments and questions were received during the feedback session.

The purpose of this report is to summarize the feedback received via the feedback survey in response to the field testing of the measures. Section 2 summarizes the cross-cutting field testing feedback, which applies to the measure development process, the supplemental documentation, and the field test report template. Section 3 focuses on the measure-specific feedback received on the 11 episode-based cost measures and two revised cost measures during the field testing period. Finally, Section 4 includes Acumen response to the comments received and next steps Acumen has implemented to date and plans to take in direct response to the feedback summarized in this report.

⁴ The attributable months in the year-long measurement period are included in the calculation of the TPCC measure. The year-long measurement period is broken up into 13 four-week months.

⁵ Stakeholders provided feedback during field testing at this online [Field Testing Feedback Survey](#)

⁶ Field testing materials are available for download on the [MACRA Feedback Page](#).

⁷ MACRA Cost Measures Field Testing Webinar materials are available for download on the [Quality Payment Program website](#).

2.0 General Field Testing Feedback

The following sections summarize the feedback received from stakeholders during the field testing feedback period on the measure development process, the supplemental documentation, and the field test report template. This section does not include a summary of the measure-specific feedback, which is discussed in Section 3 below. Measure-specific feedback was summarized and presented to the measure-specific workgroups and the TEP following the completion of field testing to inform the refinement of the episode-based and revised cost measures. This report also does not include a summary of the multiple choice question responses.

2.1 Thematic Comments on Components of Measure Development

2.1.1 Assigning Costs to the Episode Group

- One commenter recommended that non-physician providers, including audiologists and speech-language pathologists, only be held responsible for the costs under their control since they are not able to, for example, order additional services or prescribe medications.
- One commenter suggested that CMS use Minimum Data Set (MDS) data from nursing homes and assisted living facilities to cross reference attributed clinicians, potentially identifying errors. The commenter added that if MDS reporting included NPI numbers, CMS could use nursing facility (NF), skilled nursing facility (SNF), and assisted living (AL) data when calculating measure scores for physicians and nurse practitioners.

2.1.2 Risk Adjusting Episode Groups

- Two commenters discussed the risk adjustment methodology, with one commenter expressing concern with the use of the CMS Hierarchical Condition Categories (HCC), noting that HCCs were not designed to risk adjust narrowly defined patient cohorts such as episode groups. One commenter recommended that CMS expand the scope of data used to risk adjust to include information such as patient cognitive and functional status.
- One commenter expressed concern that penalizing clinicians for the poor health care choices and noncompliance of their patients may eventually lead to the stinting of care.

2.1.3 Aligning Cost with Quality

- Sixteen commenters discussed aligning cost with quality, reporting that it is unclear how quality is or will be assessed. Some commenters additionally noted that MACRA was created to accelerate value-based healthcare and quality is an important input of the value equation. Nine of these commenters noted specifically that assessing quality with claims data alone is difficult or impossible.⁸
- Four commenters cautioned that the measure development process does not account for the impact that focusing on cost reduction may have on patient outcomes or other measures of quality, noting the difficulty in providing meaningful feedback on the measures when cost is evaluated in isolation. Three of these commenters suggested that all cost measures be paired with appropriate quality metrics to avoid stinting of care.

⁸ The episode-based cost measures being field tested were developed to inform clinicians about the cost of the care they are responsible for providing to a beneficiary during the episode's timeframe and are not intended to assess quality.

2.2 Measure Development Approach

2.2.1 General Feedback on the Measure Development Approach

- Three commenters suggested that CMS use alternative data sources, including clinical data registries, and not rely solely on claims data.
- One commenter appreciated CMS and Acumen's ongoing efforts to improve the measure development and feedback collection processes.
- One commenter suggested avoiding comparisons between geriatric practices and non-geriatric practices.

2.2.1.1 Measure Development Process

- Twelve commenters appreciated the opportunity to provide detailed feedback on the cost measures and field testing. One of these commenters highlighted improvements made to the Wave 2 measure development process, noting that the process continues to be inclusive, engaging, and transparent.
- Three commenters expressed concern that the measure development approach applied a universal template for measuring cost to a wide range of diverse clinical scenarios. The commenters noted that the clinical experts' contributions were limited to methodological decisions and did not include input on the design of the underlying framework.⁹
- Two commenters suggested that the measure development process should be independent of the rulemaking and NQF Measures Under Consideration (MUC) processes.
- One commenter encouraged CMS to provide ongoing opportunities to review and revise the cost measures both prior to and following their implementation.

2.2.1.2 Measure Development Timeline

- Three commenters stated that the timeline was rushed and noted that it did not recognize that many of the participating clinical experts are practicing clinicians with limited time available to devote to the process.

2.2.1.3 Clinical Subcommittee and Workgroup Selection, Composition, and Voting

- Two commenters appreciated the inclusion of smaller workgroups in the second wave of measure development, noting that they included relevant clinical experts and incorporated diverse clinical perspectives.
- Three commenters suggested employing a voting process that recognizes CS and workgroup members' competing professional priorities and provides reasonable time to review the materials and vote.¹⁰

⁹ Throughout the measure development process, Acumen has sought input from clinicians and other stakeholders to inform the development of the episode-based cost measures, including from a standing TEP, Clinical Subcommittees, measure-specific workgroups, Person and Family Committee, and public comments received during the formal rulemaking process and the field testing of the first wave of episode-based cost measures. The Episode-Based Cost [Measure Field Testing Measure Development Process document](#) outlines this process in detail.

¹⁰ Stakeholder input is critical to the development of robust, meaningful, and actionable episode-based cost measures. Acumen sought input from clinicians and other stakeholders to inform the development of the cost measures throughout the development process include from the Clinical Subcommittees, Technical Expert Panel (TEP), Person and Family Committee (PFC), and stakeholder feedback.

- Three commenters suggested that Acumen and CMS adopt a more transparent approach to selecting CS members, including releasing proposed rosters for public comment before they are finalized, to ensure an appropriate mix of specialties and clinician types are represented.
- One commenter recommended that CS meetings be facilitated in a manner that ensures all interested members are given an opportunity to participate.
- One commenter suggested using a group consensus approach rather than the majority-rules method used.

2.2.1.4 Episode Group Selection Process

- Five commenters were concerned that clinical topics were selected and prioritized before CS members could provide input and that the list, which may have influenced CS members' selections, was based on minimal feedback.¹¹ Three of these commenters highlighted that the number of clinicians and professional societies that provided input on the original 2016 draft list of episode groups is significantly smaller than the clinical experts now involved, noting that many smaller societies were not involved in the early stages of this initiative.

2.2.2 Field Testing Feedback Period

- Six commenters expressed concern about the length of the field testing feedback period, noting that it did not provide sufficient time for stakeholders to access and review the reports and supplemental materials and to complete the survey.
 - Three of these commenters requested that the field testing and feedback collection period be extended or kept open to allow enough time for societies to receive input from a broader sample of members.
 - One of these commenters appreciated the extension of the field testing feedback period that was granted by CMS, but noted the time allotted remained insufficient given the volume and complexity of the field testing materials.
 - One of these commenters noted that the release of the publicly posted MACRA Field Testing webinar materials three days before the end of the field testing period made collecting feedback more difficult.
 - One of these commenters noted they did not have enough time to assess their report and data to provide adequate feedback.
- One commenter encouraged CMS to revise the timeline for future waves of measure development to allow for a longer field testing period.

2.2.3 Ongoing Stakeholder Engagement and Outreach

- Two commenters expressed their appreciation of CMS' commitment and efforts to engage of clinicians in the development of episode-based cost measures.
- Three commenters reported that the MACRA Cost Measures Field Testing webinar that provided background on the project and walked clinicians through the field testing

¹¹ Acumen prioritized the clinical areas with input from the TEP and took into consideration the performance of potential episode-groups using criteria including cost, beneficiary and clinician coverage, and feasibility. The [Episode-Based Cost Measure Field Testing Measure Development Process document](#) outlines this process in detail.

process was useful. However, they noted that the mid-day timing posed an issue for some clinicians.

- Three commenters stated that CMS may find it challenging to collect meaningful feedback about the cost measures without improved education and outreach efforts, with one commenter suggesting that targeted outreach be conducted to individuals within health care systems who would be most likely to understand and respond.
- Three commenters suggested that CMS' education and outreach efforts to affected clinicians was negatively impacted by the short field testing period.

2.3 Accessing the Field Test Report

2.3.1 CMS Enterprise Portal

- Nineteen commenters reported issues with accessing the CMS Enterprise Portal and downloading their reports. Issues reported by commenters included difficulty with specific web browsers, navigating the portal, and locating specific files.
 - Three of these commenters reported having the same issues during the field testing of the Wave 1 cost measures in 2017 and that the process has not been improved.
 - One of these commenters reported never being able to access the portal, in spite trying for several hours.
- Fourteen commenters noted the challenge of accessing the field test reports as members of a clinician group or a large institution. Commenters suggested creating individual login credentials so clinicians do not need to rely on their group to provide access to the CMS Enterprise Portal and reports.
 - Two commenters recommended that CMS give clinicians direct control over report access rather than having to rely on their TIN or institution.
- Seven commenters noted that downloading reports individually was a cumbersome process and requested adding a feature to download multiple reports simultaneously.
- Six commenters suggested that clinicians and clinician groups receive their field test reports via email or with a direct link to the reports.
- Three commenters reported that accessing their field test reports was an easy process. However, one commenter noted that though it was a simple process, it was time consuming.
- One commenter suggested that CMS communicate directly with clinicians and clinician groups that will be receiving field test reports.
- One commenter suggested using the same process used in distributing the Quality Resource Use Reports (QRUR) reports.

2.4 Supplemental Documentation

2.4.1 General Feedback on Supplemental Documentation

- Five commenters suggested improvements to the supplemental documentation including: (i) creating a summary file for TINs with graphical information on performance at a high level, (ii) adding a percentage column to tables that only contain numbers, (iii) including examples in the methodology documents with clinicians that do and do not meet the case minimums, and (iv) creating an additional document that contains high-

level information such as a brief description of attribution, the measures case minimum thresholds, a chart displaying the rules for the cost measures such as episode window lengths, and information on how the measures will be used in MIPS scoring.

- Two commenters provided feedback on accessing the supplemental documentation, with one commenter suggesting that all field testing materials be collocated on the Quality Payment Program website and one commenter reporting the materials were difficult to locate.
- One commenter found the supplemental documentation to be especially helpful, noting that the data and level of detail provided will inform their decision making and allow them to take concrete actions to improve costs.
- One commenter stated that the mock field test reports do not provide an adequate level of detail to demonstrate how the draft measure specifications identify episodes included in the episode-based cost measures.

2.4.2 Fact Sheet

- Twelve commenters discussed the Fact Sheet.
 - Six commenters recorded positive feedback regarding Fact Sheet, noting specifically that it was informative, comprehensive, and well organized.
 - Four commenters discussed the length of the Fact Sheet, noting that its length could be prohibitive.
 - One commenter found the Fact Sheet easy to read but lacking in detail.
 - One commenter noted that the Fact Sheet introduction was helpful but found the number of acronyms and rest of the document to be overwhelming.
- Eight commenters requested additional information be included in the document, including an explanation of risk adjustment, information to project measure outcomes, which year MIPS scores are affected, the changes to the revised measures, and real life patient examples for the measures. Two of these commenters recommended adding an executive summary at the beginning of the document. One of these commenters suggested adding descriptions of overall percentile rank, episode risk percentile scores, risk adjusted cost percentile, and the comparison of the observed vs. risk adjusted cost.
- Two commenters suggested creating separate fact sheets for each measure that include summaries of the detailed methodology documentation.
- One commenter suggested using documentation from the QRUR measures as a template for these measures since it was easier for them to understand.

2.4.3 FAQ Document

- Seven commenters discussed the FAQ, with six commenters stating that the FAQ was helpful, informative, and thorough, while one commenter noted the document was not useful in their understanding of the field test reports or supplemental documents.
- Three commenters suggested that the FAQ include examples to provide additional context, including to identify the differences between the TPCC and the QRURs. One of these commenters additionally recommended including information about how the reports can be used to improve cost performance.

- Two commenters noted the FAQ contained duplicative information also contained in the Fact Sheet.

2.4.4 Draft Cost Measure Methodology Documents

2.4.4.1 Episode-Based Cost Measures

- Five commenters provided feedback on the episode-based cost measures methodology documents, with four commenters suggesting that the documents be streamlined to a practical extent, while one commenter reported that the documents were as clear as they could be, given the complexity of the cost measures.

2.4.4.2 MSPB Clinician Measure

- Eight commenters discussed the MSPB clinician measure methodology document, with five commenters stating that the document was clear and the changes made through re-evaluation were reasonable, while three commenters stated the document was unclear or did not make sense.
- One commenter recommended that the document include patient-level detail to better understand final measure scores.

2.4.4.3 Total Per Capita Cost Measure

- Five commenters discussed the TPCC measure methodology document, with two commenters stating that the document was clear and understandable, while two commenters stated that the methodology document was confusing and lacked specificity.
- Three commenters suggested additions to the TPCC methodology document, including definitions of key terms, links in the document to the codes list file, and a subsection describing the differences between the MSPB clinician and TPCC cost measures.

2.4.5 Draft Measure Codes List Files

2.4.5.1 Episode-Based Cost Measures

- Eight commenters discussed the codes list files for the episode-based cost measures, with five commenters stating that the files were clear and easy to use, while three commenters stated that the files were overwhelming or difficult to understand.
- One commenter suggested using a clearer taxonomy to describe the trigger exclusion logic sets.

2.4.5.2 MSPB Clinician Measure

- Eight commenters discussed the codes list file for the MSPB clinician measure, with four commenters reporting that the file was concise, inclusive, and understandable, while four commenters stated that the file was overwhelming or difficult to interpret. One of these commenters stated that the difficulty interpreting the file was due to the lack of explanation of the file elements included in the MSPB clinician zip file.
- One commenter stated that the accompanying episode-level data file is not meaningful without a key to explain the various data elements and that it was difficult to judge the validity of the results without patient-level data.
- One commenter reported being unable to find the codes list in the zip file.

2.4.5.3 Total Per Capita Cost Measure

- Six commenters discussed the codes list file for the TPCC measure, with three commenters stating that the file was clear and concise, while three commenters stated that that the file was overwhelming or difficult to understand.
- Two commenters reported being unable to locate the codes list file.

2.4.6 Episode-Based Cost Measure Development Process Document

- Four commenters discussed the measure development process document, with three commenters stating that the document was clear and that the level of detail was appreciated, while one commenter stated that the document was difficult to understand.

2.5 Field Test Report Template

2.5.1 General Feedback

Overall Presentation and Content of the Reports

- Two commenters appreciated the granular data provided while also including summaries, appendices, and supplemental information; noting their ongoing request that cost measure data be presented in more digestible terms so clinicians can easily understand the information.
- One commenter noted that their TIN had numerous files containing patient-level data, but there was not a high-level summary of the group's overall performance compared to their peers.
- One commenter stated that the level of detail provided previously in the QRUR reports was greater and was preferred by their members when compared to the field test reports.

Actionability of Information

- Three commenters stated that the field test reports remain complex, unactionable, and often inaccessible to most clinicians, including to members actively involved in the measure development process. One of these commenters additionally suggested highlighting the usefulness of the field test reports in terms of providing actionable information for clinicians.

Recommendations for Improvement

- One commenter suggested reducing the number of acronyms in the reports by spelling out some terms such as Part B and other technical terms that are short and repeated often throughout the reports and supplemental documentation.
- One commenter recommended that the field test reports explicitly indicate if clinicians do or do not meet the criteria to have the cost measure included in their cost score.
- One commenter suggested that hyperlinks in the reports should take users directly to the relevant document, not to the CMS webpage where a number of documents are listed.
- One commenter requested an explanation of how size impacts cost measure score and average costs presented in the field test report. The commenter additionally suggested that the descriptions and definitions of terms such as average cost, risk percentile, and risk adjusted cost be improved with examples and diagrams.

2.5.2 Episode-Based Cost Measures

2.5.2.1 General Feedback: Episode-Based Cost Measures Field Test Report

Overall Presentation and Content of the Reports

- Three commenters had positive feedback regarding the presentation and content of the field test report template, noting that the report was easy to follow and contained comprehensive information. One of these commenters inquired if groups would be able to view their performance at other times in the year to assess their performance and identify areas for improvement.
- Eight commenters found the episode-based cost measure field test reports to be complicated, confusing, and not intuitive. One of these commenters noted that their members, including those who served on Clinical Subcommittees and measure-specific workgroups, found the reports to be overwhelming, confusing, and challenging to navigate.
- One commenter appreciated the incorporation of their society's previous recommendations submitted during last year's field testing into the field test report template and mock reports, including an improved glossary, breakdown of utilization and cost in relation to risk brackets, and improved definitions of key terms. The commenter noted these changes provide more helpful and meaningful information to clinicians.
- One commenter appreciated the inclusion of information about clinicians and facilities outside of their TIN that contributed to the episode.

Actionability of Information

- One commenter stated that the report provides actionable information that a clinician can use to improve their performance, noting the comparison to the national average is very clear.

Recommendations for Improvement

- Three commenters requested that beneficiary-level data be included.
- One commenter suggested adding additional information such as a ranking list of all clinicians outside of their TIN contributing to episode costs instead of list of the top five that is currently included.
- One commenter suggested the addition of a time metric for hospitalization and information about where patients are discharged to.
- One commenter suggested including expected cost information in the reports in addition to observed cost data.
- One commenter recommended presenting the reports as PDFs that can be printed to allow for easier comparison between clinicians.
- One commenter suggested creating individual reports for each episode-based cost measure instead of compiling them into one spreadsheet.

- One commenter recommended eliminating large cells in the report with links to other locations in the document since they are easy to select by mistake when navigating the document.
- One commenter suggested that it would be helpful to know all the episodes attributed under their TIN, allowing them to work with community providers to reduce the cost of care in the inpatient and post-acute care settings.
- One commenter noted that the summarization of cost by clinical theme is not inclusive of all charges and recommended adding additional information about the clinical themes.
- One commenter suggested that a table displaying the distribution of related Current Procedural Terminology (CPT) codes in the same risk bracket across their TIN would be helpful for episodes that have procedures which incorporate a series of codes. Such a table would allow the commenter to identify what codes are being used by other similar providers, which is not always clear when examining the top and bottom 5 CPT codes currently listed in the field test reports.

2.5.2.2 Overview Tab: Episode-Based Cost Measures Field Test Report

User-Friendliness

- Six commenters provided feedback on the Overview tab of the episode-based cost measures field test report, with three commenters stating that it was clear or helpful, while three commenters reporting that it was confusing and that the information did not make sense to them.

2.5.2.3 Understanding Your Report Tab: Episode-Based Cost Measures Field Test Report

User-Friendliness

- Five commenters provided feedback on the Understanding Your Report tab of the episode-based cost measures field test report, with two commenters stating it was clear or helpful, while three commenters stated it was confusing and that the information did not make sense.

Recommendations for Improvement

- One commenter suggested incorporating more detailed descriptions and examples.

2.5.2.4 Summary Tab: Episode-Based Cost Measures Field Test Report

User-Friendliness

- Six commenters provided feedback on the Summary tab of the episode-based cost measures field test report, with five commenters stating it was clear, helpful or understandable, while one commenter reported that the information did not make sense to them.

Recommendations for Improvement

- One commenter suggested including discussion of the interpretation of the data to increase clinician interest and understanding of the measures.
- One commenter recommended removing the graph comparing the TIN or TIN-NPI to the national average, stating that it is superfluous.

2.5.2.5 Results Tab(s): Episode-Based Cost Measures Field Test Report

User-Friendliness

- Six commenters provided feedback on the Results tab of the episode-based cost measures field test report, with two commenters stating it was clear, helpful or understandable, while four commenters expressed difficulty in understanding the information presented in the tab, especially the breakdown by selected clinical theme section.

Recommendations for Improvement

- One commenter questioned why the report highlighted areas when the TIN or TIN-NPI exceeded the national average but not areas where it was below the national average.
- One commenter suggested adding shortcuts back to the Summary and Overview tabs.

2.5.2.6 Appendix A: Episode-Based Cost Measures Field Test Report

User-Friendliness

- Four commenters provided feedback on Appendix A of the episode-based cost measures field test report, with two commenters stating it was clear and concise, while two commenters reported that the information was difficult to understand.
- One commenter appreciated the level of detail and the benchmarks provided for each service category.

Actionability of Information

- One commenter stated that the report was not actionable, noting that the breakdown of utilization and cost for outpatient and inpatient claims was misleading and stating that it did not make sense to spread the cost of a CPT code across the whole episode.

Recommendations for Improvement

- One commenter suggested that including patient-level information and the names of the treating hospital, SNF, and physician would be useful to include.
- One commenter recommended adding more location of service data and post-acute care location of service data to the appendix.
- One commenter suggested that the addition of specific cost information, such as the claims data for patients whose costs are attributed to TINs and TIN-NPIs, will result in clinicians being better able to identify the cause of high costs and implement strategies to reduce the costs to CMS.
- One commenter suggested adding shortcuts back to the Summary and Overview tabs.

2.5.2.7 Appendix B: Episode-Based Cost Measures Field Test Report

User-Friendliness

- Six commenters provided feedback on Appendix B of the episode-based cost measures field test report, with four commenters stating it was clear, useful, or self-explanatory, while two commenters reported that the information was complicated and difficult to understand.

Recommendations for Improvement

- Four commenters suggested additional information be added to Appendix B, including a column that displays expected episode costs, a column that displays observed episode costs, a breakdown of costs by service category for each patient, and shortcuts back to the Summary and Overview tabs.
- One commenter recommended adding stratified facility-level cost information, including the following: (i) information on the facility where the trigger procedure was performed, (ii) a table with average facility charges by service category for attributed episodes and rank each facility by cost, (iii) average cost data for other facilities in the area, and (iv) ranked average costs of other types of providers in attributed episodes.

2.5.3 MSPB Clinician Measure

2.5.3.1 General Feedback: MSPB Clinician Field Test Report

Overall Presentation and Content of the Reports

- Two commenters left positive feedback for the MSPB clinician field test report template, noting that the report is simple and clearly shows how clinicians compare to national trends. However, two commenters reported that the content was difficult to conceptualize and understand.

Recommendations for Improvement

- One commenter requested adding patient-level data and the names of other clinicians that treated their patients during attributed episodes.
- One commenter requested that an example and/or diagram be included when describing percentile rank to make visualizing and assessing clinician performance easier.
- One commenter suggested adding an outcomes column to the report.

2.5.3.2 Understanding Your Report Tab: MSPB Clinician Field Test Report

User-Friendliness

- One commenter found this tab to be clear and concise, while another commenter reported that the information was unclear and did not make sense.

Recommendations for Improvement

- One commenter suggested including additional descriptions and images describing percentile ranking and carrier costs.

2.5.3.3 Results Tab: MSPB Clinician Field Test Report

User-Friendliness

- Three commenters reported that the Results tab was clear and concise, while one commenter stated that the information was difficult to understand.

Actionability of Information

- One commenter reported that the information in Table 3 was not actionable or valuable to their group, comprised of surgeons, as it was difficult to understand the costs included in categories unrelated to the procedures they perform.

Recommendations for Improvement

- Two commenters requested that a definition of “carrier costs” be added.
- One commenter recommended that all service categories have a corresponding column in the excel file to allow clinicians to break down their results further and make the information more actionable.
- One commenter recommended that additional breakdown by minor and major procedures be incorporated into Table 4 to make the information actionable. The commenter additionally recommended a breakdown of provider and facility costs.
- One commenter suggested stratifying all other NPIs and facilities involved and rank them by cost to be able to see which facilities and providers are better or worse.
- One commenter suggesting including information explaining if a high or low percentile rank was desired.

2.5.4 Total Per Capita Cost Measure

2.5.4.1 General Feedback: TPCC Field Test Report

Overall Presentation and Content of the Reports

- Two commenters reported that the field test report was very clear and concise, while three commenters found the report’s content to be difficult to conceptualize and to understand.

Actionability of Information

- One commenter reported that the tables presenting average standardized cost and average normalized risk score per episode were helpful but that the information was not actionable.

Recommendations for Improvement

- Four commenters suggested adding beneficiary-level detail to the report.
- Two commenters suggested the addition of a data dictionary to describe the fields in the accompanying excel file would be useful.
- One commenter recommended adding the date of the candidate event for each attributed beneficiary to the field test report.
- One commenter suggested stratifying all other NPIs and facilities involved and rank them by cost to demonstrate which facilities and providers are better or worse.
- One commenter reported that the PDF format made the report difficult to use and suggested presenting the summary tables as excel documents.
- One commenter suggested that a resource with recommendations on controlling costs would be helpful.
- One commenter recommended that the document include patient-level detail to better understand final measure scores.

- One commenter suggested it would be helpful to know how their percentile rank would affect their points with the cost measure.

2.5.4.2 Results Tab: TPCC Field Test Report

User-Friendliness

- Two commenters reported that the Results tab was clear and concise, while one commenter stated that the information was difficult to understand.

Recommendations for Improvement

- One commenter suggested that presenting the information graphically would be helpful.
- One commenter recommended breaking the data down further to present major and minor procedures to make the information more actionable. The commenter additionally requested that a definition of “carrier costs” be added.
- One commenter requested that an example and/or diagram be included when describing percentile rank to make visualizing and assessing their performance easier.
- One commenter recommended that a column corresponding to the Results tab be added to the excel file to better determine opportunities for improvement.

2.5.4.3 Appendix A: TPCC Field Test Report

User-Friendliness

- One commenter reported that Appendix A was clear and concise, while one commenter stated that the information was difficult to understand.

Recommendations for Improvement

- One commenter recommended the following changes to Appendix A be made: (i) services broken out care setting, sub-groups, and timing in the episode, and (ii) adding tables that display where utilization is higher than average and where cost per episode is higher than average.
- One commenter requested clearer header titles and that definitions be included.

2.5.4.4 Appendix B: TPCC Field Test Report

Recommendations for Improvement

- One commenter requested the following information be included: (i) all cost breakdown that was previously included in supplemental QRUR tables, (ii) further break out of post-acute care costs to include cost at each acute and post-acute site, (iii) separate costs for attributed providers when more than one is attributed an episode, (iv) break out costs by clinical theme, care setting, and medical category at the patient-level (v) include total number of hospitalizations and readmissions, (vi) display total number of emergency department visits per episode, and (vii) indicate how many E&M codes per episode are with the attributed provider(s).

- One commenter suggested it would be helpful to provide an example to demonstrate how the 4-week interval works with the risk window in the revised methodology.

3.0 Measure-Specific Field Testing Feedback

The following sections summarize the measure-specific feedback received on the 13 cost measures during the field testing period. These feedback were shared with the measure-specific workgroups prior to the measure refinement webinars in November and December 2018 to ensure these comments were considered and incorporated into each measure's specifications. A summary of the refinements made to the measures as a result of the field testing is provided in Appendix A.

The stakeholder feedback is categorized into the components of cost measures. For the episode-based cost measures, feedback summarized under the "Cross-Cutting Feedback" heading reflects comments that are relevant to all episode-based cost measures.

- Section 3.1 discusses the feedback received on the Acute Kidney Injury Requiring New Inpatient Dialysis cost measure.
- Section 3.2 contains the feedback received on the Elective Primary Hip Arthroplasty cost measure.
- Section 3.3 presents the feedback received on the Femoral or Inguinal Hernia Repair cost measure.
- Section 3.4 summarizes the feedback received on the Hemodialysis Access Creation cost measure.
- Section 3.5 discusses the feedback received on the Inpatient Chronic Obstructive Pulmonary Disease (COPD) Exacerbation cost measure.
- Section 3.6 contains the feedback received on the Lower Gastrointestinal Hemorrhage cost measure.
- Section 3.7 summarizes the feedback received on the Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels cost measure.
- Section 3.8 presents the feedback received on the Lumpectomy, Partial Mastectomy, Simple Mastectomy cost measure.
- Section 3.9 discusses the feedback received on the Non-Emergent Coronary Artery Bypass Graft (CABG) cost measure.
- Section 3.10 presents the feedback received on the Psychoses/Related Conditions cost measure.
- Section 3.11 contains the feedback received on the Renal or Ureteral Stone Surgical Treatment cost measure.
- Section 3.12 summarizes the feedback received on the revised Medicare Spending Per Beneficiary (MSPB) clinician cost measure.
- Section 3.13 presents the feedback received on the revised Total Per Capita Cost (TPCC) cost measure.

3.1 Acute Kidney Injury Requiring New Inpatient Dialysis

3.1.1 Definition of an Episode Group

- No comments received on this component.

3.1.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.1.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
 - One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
 - One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

- One commenter requested clarification CMS provide clarification on how an episode will be attributed to a clinician group if more than one clinician provides 30% or more of the E&M services, specifically if a nephrologist and a hospitalist in different TIN-NPI groups may both render more than 30% of inpatient E&M services during an Acute Kidney Injury.

3.1.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.1.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully

tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.1.6 Considerations for Clinical Themes

- No comments received on this component.

3.2 Elective Primary Hip Arthroplasty

3.2.1 Definition of an Episode Group

- No comments received on this component.

3.2.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.2.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.

- One commenter noted that most episode costs are out of the individual primary care clinician's control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

3.2.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window might not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.2.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.

- One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.2.6 Considerations for Clinical Themes

- No comments received on this component.

3.3 Femoral or Inguinal Hernia Repair

3.3.1 Definition of an Episode Group

- No comments received on this component.

3.3.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.3.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.

- One commenter noted that most episode costs are out of the individual primary care clinician's control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

3.3.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window might not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.3.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.

- One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.3.6 Considerations for Clinical Themes

- No comments received on this component.

3.4 Hemodialysis Access Creation

3.4.1 Definition of an Episode Group

Episode Triggers

- One stakeholder agreed with the trigger codes for this episode-based cost measure.
- Several stakeholders noted the difficulty of differentiating between planned two-stage procedures and unplanned revisions and that doing so requires the use of the -58 modifier code. In addition, the stakeholders noted that the -58 modifier code is valid for only 90 days and cannot capture the entire 180-day period of the episode window.
- One commenter suggested that an episode should begin when a patient receives their first hemodialysis access creation.

Episode Sub-Groups

- Many commenters suggested that staged procedures should be sub-grouped, cautioning that staged procedures and access location cannot be interpreted from CPT codes. One of these stakeholders recommended creating upper and lower extremity sub-groups, and another stakeholder recommended creating a sub-group for all revision procedures.
- Several stakeholders highlighted the potential for creating sub-groups for patients who have not received outpatient dialysis for 12 months or who started dialysis while enrolled in Medicare and remained continuously enrolled.

3.4.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.
- Many commenters highlighted variables known to influence hemodialysis access outcomes that cannot be adjusted using claims data including vein characteristics and availability, previous hemodialysis accesses, obesity, and skin turgor.

- Several stakeholders suggested the creation of additional ICD-10 DX codes to allow relevant patient characteristics, including access location and laterality, to be captured and used to risk adjust.
- One commenter recommended including the presence of previous hemodialysis fistulae or grafts in the risk adjustment model but noted that this information is not available in claims data.
- One stakeholder proposed including the number of previous failed accesses as part of the risk adjustment methodology to avoid penalizing providers who care for a high proportion of challenging patients.
- One stakeholder conveyed that it is not clear if the dialysis vintage data included in the risk adjustment model is from claims data and that it should be derived from the CMS Form 2728.

Exclusions

- Many commenters suggested the addition of strict exclusion criteria to create a more homogenous patient population. Stakeholders suggested only including patients with a clean period (e.g., one month, 12 months) without outpatient dialysis or patients who started dialysis while enrolled in Medicare and remained continuously enrolled.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.4.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
 - One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
 - One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

- Many stakeholders expressed concern that revision procedures, including fistulagram, stent, and angioplasty, are attributed to surgeons, noting that the management and coordination of care is controlled by nephrologists following the initial procedure.

3.4.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback**
 - One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.
- One commenter noted that the lookback period for prior hemodialysis access attempts is only 120 days, which may not account for all previous access attempts since each new attempt is more difficult and has a higher likelihood of problems or failure.

Post-Trigger Episode Window

- **Cross-Cutting Feedback**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.
 - Many commenters were concerned about potential to create nested episodes where a second access procedure is performed during the post-trigger window if the index procedure fails.
 - One stakeholder recommended all costs for the 180-days following a trigger code should be assigned to the original episode and not be included in a new episode as this could lead to double counting of costs in simultaneous episodes.

Pre-Trigger Assigned Services

- Many commenters noted that is unreasonable to assign pre-trigger catheter infections and the associated costs to the surgeon since they are often the result of delays or factors outside of the surgeon's control.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.4.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.
- Many stakeholders questioned how quality in vascular access is defined; noting it is difficult to assess quality using claims data alone.
- Many commenters noted that there are not currently quality measures available for vascular access other than prevalence of fistula vs. graft, which is not a measure of quality.

3.4.6 Considerations for Clinical Themes

- The clinical themes that were used for this cost measure during field testing are:
 - Preoperative Work-Up
 - Postoperative Imaging
 - Perioperative Care and Monitoring
 - Perioperative Hemodynamic Instability / Bleeding
 - Wound / Vascular Access Complications
 - Early Postoperative Medical Conditions
 - Early Postoperative Surgical Conditions
 - Dialysis Catheter-Related Bloodstream Infections
 - Redo / Revision of Vascular Access
- Many commenters suggested separating the Redo and Revision of Vascular Access clinical theme.

3.5 Inpatient Chronic Obstructive Pulmonary Disease (COPD) Exacerbation

3.5.1 Definition of an Episode Group

- No comments received on this component.

3.5.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**

- One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
- One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
- One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**

- One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
- A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.5.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**

- Some commenters expressed support for the attribution methodology for the episode-based cost measures.
- One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
- One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
- One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
- One stakeholder commented that attribution rules could be clarified, specifically for instances in which multiple TINs or TIN-NPIs reach the E&M thresholds for acute inpatient medical condition measures.
- For clinicians within a clinician group who are attributed an acute inpatient medical condition episode, one stakeholder suggested using a 30% E&M threshold for attribution rather than using just a single E&M code. Specifically, the stakeholder expressed concern over attributing episodes to a clinician with a single E&M code when patient length of stay is long.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

- One stakeholder questioned whether there is a potential for attribution errors stemming from inclusion of a post-trigger inpatient stay for acute inpatient medical condition episodes.

3.5.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.5.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.5.6 Considerations for Clinical Themes

- No comments received on this component.

3.6 Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels

3.6.1 Definition of an Episode Group

- No comments received on this component.

3.6.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.
- One stakeholder expressed concern with using the Hierarchical Condition Categories (HCCs) to risk adjust the Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels cost measure because HCCs are not designed to risk adjust narrowly defined patient cohorts. The stakeholder recommended that CMS release additional data on the cost variation among the episode group's patients that can be explained by the risk adjustment model, as they are concerned the model does not sufficiently capture the degree of neurologic debility or the likelihood of benefitting from the procedure.

Other

- **Cross-Cutting Feedback**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.6.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.

- One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty on the rationale for using the “GF” code to specify anesthesia services.
- One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

3.6.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback**

- One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback**

- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.
- One stakeholder expressed concern that episode costs are evaluated for 30 days after seeing a patient. The stakeholder requested clarification on whether they would be responsible for the cost of a spinal surgery performed by an orthopedic surgeon 29 days after seeing a patient or for an emergency surgery that a patient requires after the patient is referred to them since both surgeries would be provided within a 30-day period.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**

- One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.
- One stakeholder commented that post-trigger services assigned to episode groups for the inpatient medical services category should not be included if they were performed prior to the procedure.
- One commenter suggested that some post-trigger services assigned to inpatient medical services and outpatient facility and clinician services categories should be excluded

because they are based on diagnoses that remain with the patient in the post-operative period. Some examples include dorsopathy, spondylosis, disc disease, abnormal gait, nerve root disorder, opioid use, muscle disorder, tissue disorder, dorsalgia, hypotension, disorders of the central nervous system, and spondylopathies.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.
- One stakeholder suggested that the cost measure should take into account preventive services, noting that there are HCFC guidelines for Acute Low Back Pain recommending a 4-6-week long trial application of manual medicine prior to authorizing a lumbar spine fusion procedure.¹²

3.6.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.
- One stakeholder commented that quality cannot be monitored because there are no useful quality measures to attach to the Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels cost measure.

3.6.6 Considerations for Clinical Themes

- No comments received for this component.

3.7 Lower Gastrointestinal Hemorrhage

3.7.1 Episode Triggers

- Three stakeholders suggested updating the current trigger codes as summarized in Table 1 below, and approved of all other trigger codes. The recommended changes were intended to ensure all episodes with principal or concurrent upper GI bleed would be excluded, via trigger modifications or exclusions.
- Supplemental information may be found in Appendix B, Table B1.

¹² The commenter did not provide further details about the HCFC guidelines.

Table 1. Summary of Feedback on Trigger Codes

Logic Set	Rule	Code	Add, Remove, or Modify	Comments
A	A2	All ICD-10 DGNs	Modify	<ul style="list-style-type: none"> Implement only if the code occurs on the trigger claim as the principal diagnosis
B	B2	All ICD-10 DGNs	Modify	<ul style="list-style-type: none"> Implement only if the code occurs on the trigger claim as the principal diagnosis
C	C2	DGN K550, K551	Remove	<ul style="list-style-type: none"> Not a principal diagnosis for these MS-DRGs; will be captured if occurring on an IP claim for GI bleed NOS
C	C2	All other ICD-10 DGNs	Modify	<ul style="list-style-type: none"> Implement only if the code occurs on the trigger claim as the principal diagnosis
D	D2	DGN K921, K922	Modify	<ul style="list-style-type: none"> Implement only if the code occurs on the trigger claim as the principal diagnosis

3.7.2 Risk Adjustment

Risk Adjustment Variables

- Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Exclusions

- To more thoroughly ensure the exclusion of episodes with concurrent upper and lower GI bleed, some stakeholders suggested revisions to Trigger Exclusion Logic Set A, as outlined in Table 2 below.

Table 2. Summary of Feedback on Trigger Exclusions in Logic Set A and New Logic Set

Rule	Code	Add, Remove, or Modify	Comments
A2	DGN K921, K922	Remove	<ul style="list-style-type: none"> The suggested revisions to the trigger logic make this exclusion unnecessary.
A3	DGN K2X, K318X, K920	Modify	<ul style="list-style-type: none"> Remove the restriction that the DGN code occur on PB claims
A3	(See Comments)	Add	<ul style="list-style-type: none"> Add the following DGN codes: K5501, K5502, K221, K20, K319, K3189, I85, I864, K228, K226, K838, and K8689
New	All DGN codes from Rule A	Add	<ul style="list-style-type: none"> Create new trigger exclusion logic set for MS-DRG 356-358, using the same DGN rules as for the medical DRGs

- Several stakeholders suggested that all gastrointestinal malignancies (by location and type) should be trigger exclusions, noting that the current exclusions are limited to “primary malignant neoplasms of the anus and anal canal, colon, jejunum, rectosigmoid junction, and rectum.”

- A few commenters suggested current trigger logic should be revised to remove episodes with a principal diagnosis of upper GI bleed via checking the inpatient claim, rather than Part B claims.
- Some commenters noted melena (K921) and unspecified GI hemorrhage (K922) might indicate upper GI bleed and so could reasonably be excluded.
- One commenter recommended excluding patients with cirrhosis and other liver diseases.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.7.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
 - One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
 - One stakeholder commented that attribution rules could be clarified, specifically for instances in which multiple TINs or TIN-NPIs reach the E&M thresholds for acute inpatient medical condition measures.
 - For clinicians within a clinician group who are attributed an acute inpatient medical condition episode, one stakeholder suggested using a 30% E&M threshold for attribution rather than using just a single E&M code. Specifically, the stakeholder expressed concern over attributing episodes to a clinician with a single E&M code when patient length of stay is long.
 - One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

- One stakeholder questioned whether there is a potential for attribution errors stemming from inclusion of a post-trigger inpatient stay for acute inpatient medical condition episodes.

3.7.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window might not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.
- A few commenters suggested the post-trigger window be shortened to 35 days, so as to capture the inpatient stay and 30 days post-discharge, with no services assigned beyond the 35 days.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.
- Some stakeholders suggested physical therapy costs should not be assigned.
- One commenter requested DME costs be removed, as well.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.7.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate

value-based healthcare, which is only possible if quality and cost metrics are tied together.

- One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.7.6 Considerations for Clinical Themes

- No comments received on this component.

3.8 Lumpectomy, Partial Mastectomy, Simple Mastectomy

3.8.1 Definition of an Episode Group

- No comments received on this component.

3.8.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.
- One stakeholder questioned why reconstruction was risk adjusted when the workgroup voted that it should be monitored for field testing, as noted in the June 2018 workgroup input summary of poll results. (Note from Acumen: The workgroup voted to monitor reconstruction for field testing during the June 2018 in-person meeting, but later voted to risk adjust for it during the Service Assignment Risk Adjustment webinar in July 2018. It is currently not assigned as an associated cost to the episode)

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.8.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**

- Some commenters expressed support for the attribution methodology for the episode-based cost measures.
- One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
- One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
- One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.
- One commenter questioned why they were attributed episodes under the measure, noting that they have no control over the care captured in the episode and that they were attributed as if they are the primary care provider in the care.

3.8.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.8.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.8.6 Considerations for Clinical Themes

- No comments received on this component.

3.9 Non-Emergent Coronary Artery Bypass Graft (CABG)

3.9.1 Definition of an Episode Group

- No comments received on this component.

3.9.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.9.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
 - One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
 - One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

3.9.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.

Other

- **Cross-Cutting Feedback:**

- One commenter noted that the cost measures do not appear to include anesthesia costs.

3.9.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**

- Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
- One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.9.6 Considerations for Clinical Themes

- No comments received for this component.

3.10 Psychoses/Related Conditions

3.10.1 Definition of an Episode Group

Episode Triggers

- A commenter questioned the rationale for why subjectively less severe diagnoses (e.g., major depressive disorder) are designated as trigger exclusions whereas more severe diagnoses were not (e.g. major depressive disorder, severe).

3.10.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**

- One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
- One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
- One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**

- One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for

ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.

- A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.10.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**

- Some commenters expressed support for the attribution methodology for the episode-based cost measures.
- One stakeholder commented that attribution rules could be clarified, specifically for instances in which multiple TINs or TIN-NPIs reach the E&M thresholds for acute inpatient medical condition measures.
- One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
- One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty on the rationale for using the “GF” code to specify anesthesia services.
- For clinicians within a clinician group who is attributed an acute inpatient medical condition episode, one stakeholder suggested using a 30% E&M threshold for attribution rather than using just a single E&M code. Specifically, the stakeholder expressed concern over attributing episodes to a clinician with a single E&M code when patient length of stay is long.
- One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.
- One stakeholder questioned whether there is a potential for attribution errors stemming from inclusion of a post-trigger inpatient stay for acute inpatient medical condition episodes.

3.10.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**

- One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**

- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Pre-Trigger Assigned Services

- One stakeholder believed that attribution of all costs pre-admission could be difficult for providers or hospital systems to control if the services were provided outside of the hospital system. The commenter noted that this issue is particularly relevant for mental health and substance use treatment providers given the variability in: (i) the available community services and their ability to accept new or returning patients, and (ii) the range of qualified providers who are a part of the treatment team and affiliated with the hospital system.

Post-Trigger Assigned Services

- **Cross-Cutting Feedback:**
 - One stakeholder expressed concern that some measures may be overly broad due to the inclusion of MS-DRGs that are not directly related to the procedure or condition the measure is focused on.
- One stakeholder expressed the same concerns noted in Section 4.3 above for post-admission costs.

Other

- **Cross-Cutting Feedback:**
 - One commenter noted that the cost measures do not appear to include anesthesia costs.

3.10.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**
 - Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
 - One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.10.6 Considerations for Clinical Themes

- No comments received on this component.

3.11 Renal or Ureteral Stone Surgical Treatment

3.11.1 Definition of an Episode Group

- No comments received on this component.

3.11.2 Risk Adjustment

Risk Adjustment Variables

- **Cross-Cutting Feedback:**
 - One stakeholder recommended risk-adjusting or stratifying costs for providers practicing in academic medical centers, as they may have higher costs due to complex patient mixes.
 - One stakeholder posited that patient socioeconomic status, which is not included in the risk adjustment model, affects wait-time before procedures.
 - One stakeholder recommended inclusion of cognition and functional status in the risk adjustment methodology. This commenter noted that these data are available from post-acute care quality reporting. Data on durable medical equipment (DME) usage can also predict functional status.

Other

- **Cross-Cutting Feedback:**
 - One commenter expressed concern with the current approach to risk adjustment for patients who may need palliative care. Proper risk adjustment is necessary for ensuring accurate predictions of costs, especially when there is heterogeneity in patient severity and expected costs under a given episode.
 - A stakeholder noted there are challenges to measure development, particularly for risk adjustment, due to the cost measures relying solely on claims data.

3.11.3 Attribution of the Episode Group to Clinicians

- **Cross-Cutting Feedback:**
 - Some commenters expressed support for the attribution methodology for the episode-based cost measures.
 - One stakeholder appreciated the effort to include anesthesia modifiers as exclusion modifiers.
 - One commenter suggested further review of the “GF” exclusion modifier code. The commenter noted certified registered nurse anesthetists (CRNAs) should not be identified with the “GF” modifier code, and expressed uncertainty about the rationale for using the “GF” code to specify anesthesia services.
 - One commenter noted that most episode costs are out of the individual primary care clinician’s control. This commenter believed that it would be more appropriate to hold the hospital or specialists accountable for these episode costs.
 - One stakeholder emphasized the importance of ensuring episodes are attributed to clinicians who render specific triggering services, noting that hospice and palliative clinicians should not be attributed episodes and should not be held accountable for costs of care unrelated to the services they provide.

3.11.4 Assignment of Costs to the Episode Group

Pre-Trigger Episode Window

- **Cross-Cutting Feedback:**

- One commenter believed that the operationalization of the pre-trigger window may not be adequate or appropriate when clinicians serve patients with long wait-times in between recommending a procedure and the procedure being performed. The commenter noted that when pre-operative services are administered slowly and over a long period of time before the triggering event, the services may not be captured in the pre-trigger window and costs may be artificially lowered.
- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Post-Trigger Episode Window

- **Cross-Cutting Feedback:**

- One stakeholder expressed concern that some measures may be overly broad due to the length of the episode window.

Other

- **Cross-Cutting Feedback:**

- One commenter noted that the cost measures do not appear to include anesthesia costs.

3.11.5 Alignment of Cost with Quality

- **Cross-Cutting Feedback:**

- Some stakeholders highlighted the importance of aligning cost and quality measures, noting the difficulty for clinicians to evaluate and provide feedback on cost measures without awareness of their alignment with quality measures. Alignment of cost and quality measures is also important to avoid disincentivizing clinicians from treating medically complex patients, leading to potential unintended consequences. Stakeholders noted that one aim of cost measure development was to accelerate value-based healthcare, which is only possible if quality and cost metrics are tied together.
- One stakeholder suggested that CMS include an accountability framework when assessing clinician performance that includes quality measures that are meaningfully tied to the procedures and services included in episode-based cost measures to create incentives for high-value, patient centered care.

3.11.6 Considerations for Clinical Themes

- No comments received on this component.

3.12 Medicare Spending Per Beneficiary (MSPB) Clinician

3.12.1 Attribution of MSPB clinician Medical and Surgical Episodes to Clinicians

Change to TIN-Level Attribution for Medical Episodes

- Several stakeholders noted that the methodology to attribute episodes at the TIN level is confusing.
- One commenter indicated that the change in the methodology is clear and concise.
- One commenter agreed with the change to attribute medical episodes first at the TIN level.

- One stakeholder stated that this change in the attribution methodology would have no impact on certain practices if providers associated with those practices do not share accountability for beneficiaries.
- One stakeholder disagreed with the methodology to calculate the MSPB clinician measure case minimum pointing out that the current methodology favors bigger clinician group practices. The commenter also proposed that the case minimum should be measured at the TIN-NPI level for both individual clinicians and clinician group practices to ensure that it is calculated fairly for everyone regardless of the group size.

New Method to Attribute Clinicians with E&M Threshold for Medical Episodes

- A few stakeholders stated that the methodology to attribute medical episodes using the 30% E&M threshold is complicated and/or confusing.
- Several commenters expressed support for the proposed attribution methodology for medical episodes and indicated that the threshold of E&M services should not be lower than 30%.
- One commenter indicated that under the new attribution methodology, individual clinicians might be held accountable for the MSPB clinician episode cost that they have no control over, especially in cases when the TIN under which they practice meets the 30% E&M threshold because of other clinicians billing E&M services under the TIN. The commenter provided a specific example where Nurse Practitioners under the TIN meet the 30% E&M threshold and are attributed the measure, while the Radiation Oncologist under that TIN does not bill sufficient number of E&M services but is still attributed the measure.
- A few stakeholders suggested that diagnostic radiologists should be excluded from being attributed the MSPB clinician measure since in most cases they render services that are requested by other clinicians and, therefore, have limited influence on the beneficiary care. One commenter specified that diagnostic radiology (specialty code 30) and nuclear medicine (specialty code 36) specialties should be excluded from the MSPB clinician measure.
- One stakeholder noted that from their practice, radiologists were appropriately not attributed the measure.

New Method to Identify Main Procedure for Attribution of Surgical Episodes

- A few commenters stated that the methodology is complicated and/or confusing.
- Several stakeholders expressed support for the proposed methodology to attribute surgical episodes.

3.12.2 Service Exclusion Codes and Logic

High level exclusion rules

- One commenter supported the exclusion of hospice costs from the measure.

Service-level exclusion rules defined by MDC of the index admission

- One stakeholder indicated that imaging services (7xxxx and 93xxx) should not be included in the calculation of the MSPB clinician measure.

3.12.3 Additional feedback received

- One commenter expressed concern that the measure might not reflect the fact that the clinician group practice keeps moderately sick patients out of the inpatient setting and has a disproportionate number of sicker people with inpatient stays. The commenter indicated that under the current measure calculation methodology this would make the group practice have an unreasonably high MSPB clinician measure score.
- Several commenters requested information to increase their understanding of the measure
 - A few commenters indicated that a file with detailed, more actionable beneficiary-level information would be helpful.
 - One stakeholder suggested that having access to the episode-level file would help them to understand why radiologists under the TIN were attributed medial episodes given that they almost never bill E&M claims.
- One commenter indicated that lower GI bleeding episodes that are captured by the Lower GI Hemorrhage episode-based cost measure should be excluded from the MSPB clinician measure calculation. Specifically, the commenter suggested that the cost associated with this medical condition is being double-counted since it is captured by both the MSPB clinician and the episode-based cost measures.

3.13 Total Per Capita Cost (TPCC)

3.13.1 Attribution of Beneficiaries to Clinicians

Specialty Exclusions

- Several commenters expressed strong dissatisfaction with being attributed TPCC measure episode cost that they have no control over, particularly when they did not consider themselves Primary Care Physicians (PCPs).
- Several stakeholders suggested that certain specialties should be excluded from being attributed the TPCC measure.
 - Several stakeholders indicated that radiation oncology specialists and surgeons should not be attributed cost under this measure.
 - Some stakeholders stated that nurse practitioners (NP) working in specialty practices should be excluded from being attributed the TPCC measure.
 - Some commenters requested that diagnostic radiologists, interventional radiologists, and nuclear medicine physicians be added as specialty exclusions.
 - Some stakeholders requested the addition of therapeutic and diagnostic endoscopy services to the list of service category exclusions.
 - One stakeholder stated that physician assistants (PA) should be excluded from being attributed the measure.
 - One stakeholder requested obstetrician-gynecologists to be excluded from being attributed the measure.
 - One commenter expressed concern that the new attribution methodology at the TIN level is unintentionally attributing the measure to optometrists, which would impact ophthalmologists' MIPS scores. The commenter requested ophthalmologists and

optometrists as well as all physicians providing eye care to be excluded from attribution.

- To ensure that ophthalmologists are not attributed the measure, the stakeholder suggested a reduction in the threshold of the percentage of candidate events that exclude a physician who performs 10- or 90-day global surgery from the current 15%.
- One commenter noted that the criteria for what specialties were selected for exclusion was unclear and that the list of specialties appears to be incomplete. Other specialties, such as pathologists, should be included.
- One commenter was concerned that the revised TPCC measure is identifying highly specialized gastroenterology services as primary care management.

Attributing Beneficiaries to Multiple Clinicians

- Some commenters found the methodology to attribute the TPCC measure to multiple clinicians confusing.
- One commenter noted that the attribution methodology makes sense provided that the cost is not attributed to more than one TIN-NPI within the same TIN.
- One commenter asked for clarification on how the TPCC measure is attributed if multiple physicians bill E&M services for the same patient within the episode window.
- One commenter stated that the TPCC measure cost should be attributed to each individual clinician who treats the patient, and indicated that a file with detailed, more actionable beneficiary-level information would be helpful.
- One commenter asked for clarification on how cost is attributed to more than one provider when accounting for overall cost to the TIN and what the lookback period is for HCCs to be factored into risk score calculation.
- One commenter noted that they do not support the assignment of costs to multiple, unrelated TINs.

Candidate Event Logic – Opening and Attributing Beneficiary-Months

- Several stakeholders expressed strong support for the new attribution methodology.
- One commenter supported the new methodology and believed it was an improvement in identifying PCPs.
- One commenter stated that the cost grouping methodology is not a true representation of services performed by a specific clinician. Specifically, the commenter indicated that under this methodology, a clinician can be attributed costs for services unrelated to the condition they treated the beneficiary for solely because that clinician billed the first and only E&M service.
- One stakeholder stated that attribution of primary care E&M services with a non-E&M service provided by another TIN increases the potential for the model to be compromised.
- One commenter expressed concern over the fact that primary care physicians will be held responsible for costs of certain expensive services, which contradicts the rationale for exemption of the specialties that provide these services from the measure. The commenter also requested clarification on whether the costs for these services provided

by exempt clinicians would be attributed to the physician who provides the first E&M service that triggers the episode. The same commenter asked for clarification on whether CRNAs are eligible for the anesthesiology exemption.

- Several stakeholders were unclear about the proposed methodology to open and attribute TPCC episodes.
 - One stakeholder was unclear whether a second candidate event for the same beneficiary and TIN-NPI combination would trigger a new risk window or whether this new risk window would not begin until the current risk window or current measurement period ends.
 - One commenter asked for clarification of the rationale for allowing a non-E&M primary care service provided by any TIN within 3 days of the E&M service to trigger an episode. The same commenter questioned whether a discrete list of services rather than the current list of non-E&M primary care services would be more appropriate and provide a stronger linkage between the primary care E&M service and the non-E&M service.
 - One stakeholder requested clarification on when exactly the candidate event starts relative to the measurement period.
 - One commenter requested clarification on which costs are included when an episode is triggered by an E&M service followed by another service billed by the same TIN within 90 days.
 - One commenter inquired whether in cases when an episode is triggered by a candidate event together with a service provided by a different TIN 3 days earlier, a TIN-NPI would be attributed costs of the services that were provided before the clinician had ever met the patient.
 - One commenter noted that it is not clear whether a beneficiary can be attributed to the same TIN-NPI more than once during the measurement period.
 - One commenter asked for clarification on whether an episode can only be triggered by an E&M service from the same clinician group that provided the primary E&M service, or whether it can be triggered by a non-E&M primary care service provided from any TIN within +/- 3 days of the primary E&M service.

Risk Window

- A few commenters expressed strong support for the methodology to use risk windows for beneficiary cost attribution.
- Some stakeholders found the concept of a risk window confusing which made it difficult for them to provide feedback.
- One commenter asked whether the candidate event includes days or costs outside of the measurement period and if so, what costs are included or excluded.

3.13.2 Additional Feedback Received

- Some stakeholders indicated that the methodology document needed to be clearer, specifically mentioning the need for more clarity in defining key terms, such as a TPCC episode or the measurement period, among other metrics.
- One commenter asked whether the list of non-E&M primary care services includes services that are not covered by Medicare. If so, the commenter suggested that the list

should either be renamed or the consultation codes which are not covered by Medicare and the E&M codes that are currently included, should be removed.

- A few stakeholders inquired whether more information on how the revised TPCC measure differs from the measure used in the Quality and Resource Use Reports (QRURs) could be available.
- One commenter requested clarification on whether the costs grouping rules have changed or whether they have remained the same as for the TPCC measure currently used in MIPS.
- One stakeholder disagreed with the methodology to calculate the TPCC measure case minimum pointing out that the current methodology favors bigger clinician group practices. The commenter also proposed that the case minimum should be measured at the TIN-NPI level for both individual clinicians and clinician group practices to ensure that it is calculated fairly for everyone regardless of the group size.
- One commenter noted that it is not clear whether a beneficiary can be attributed to the same TIN-NPI more than once during the measurement period. The same commenter urged CMS to include the date of the candidate event for each attributed beneficiary in the field test reports.
- One commenter was also interested in information that would allow them to improve their TPCC measure score.
- One commenter noted that the new model increases the number of specialists to whom the measure is attributed, and suggested that the risk-adjustment model should account for the fact that these specialists are likely to see high-need patients who incur higher costs than TINs that mostly consist of primary care providers (PCPs).
- One commenter asked why the measurement period for the TPCC measure is not the same as for the other measures being field-tested.
- One commenter requested confirmation for whether or not the specialty adjustment had been eliminated from calculating the TPCC measure, and suggested further discussion regarding the rationale and impact of this decision.
- One commenter asked what reliability studies were conducted for the measure and whether this information would be publicly shared. The same commenter asked whether stakeholders will be provided with information comparing the current and revised TPCC measures with regard to number and patterns of physicians and patients attributed.

4.0 Acumen Response and Next Steps

We appreciate the engagement of stakeholders with the measure development process and will take into consideration the feedback received during field testing. We also appreciate the interest expressed by stakeholders in remaining engaged as we move forward with future measure development, such as through activities including the TEP, Clinical Subcommittees, measure-specific workgroups, field testing, and public comment periods. Stakeholder input and engagement is key to our approach to measure development, and we believe the extensive clinician and stakeholder input on these measures will help ensure that these measures provide meaningful information to clinicians about their cost performance. As part of considering the feedback summarized in this report, we will share the relevant feedback with the Clinical Subcommittees, measure-specific workgroups, and the TEP for their consideration on operationalizing this field testing input. The rest of this section includes a summary of the key next steps in response to the stakeholder feedback we received.

Thematic Comments on the Components of Measure Development

Commenters emphasized the importance of cost and quality measure alignment, and expressed concerns about how quality is going to be assessed alongside cost.

- We agree that alignment of cost and quality is a critical aspect of the measure development process, as it provides information on care efficiency and helps promote appropriate provision of services based upon patient needs. We will continue to seek input from stakeholders, and share the feedback with the Clinical Subcommittee, measure-specific workgroups, TEP members, and CMS, the steward of the measures, to inform future measure development.

Measure Development Approach

Commenters noted that the measure development timeline, including the time allotted for the field testing feedback period, was rushed. Specifically, the timeline did not provide sufficient time for stakeholders to access and review the reports and supplemental materials, and complete the feedback survey.

- We appreciate the continued stakeholder and clinician engagement throughout the two waves of measure development. We will take into account the feedback on improving the development timeline, especially the field testing process, during future measure development to ensure that future field testing efforts can convey meaningful and accessible information to clinicians in a reasonable timeline. We recognized this concern expressed by stakeholders during this previous field testing period and extended the period to allow stakeholders additional time to review the materials and complete the feedback survey.

Commenters suggested improvements to the Clinical Subcommittee process, including employing a voting process that takes into consideration the competing professional priorities of members and ensuring they are provided adequate time to review materials and vote. Commenters also suggested improving the transparency of the member selection process, by releasing a proposed roster for public comment prior to finalization.

- We recognize the importance of stakeholder input to the development of robust, meaningful, and actionable episode-based cost measures, and appreciate the time and effort the Clinical Subcommittee members have put into the development of these measures. We will take into consideration the feedback shared regarding this process, and will continue to refine our approach to collecting input to ensure that as many interested stakeholders as possible are able to contribute.

Commenters supported extensive education and outreach efforts, including targeted outreach to clinicians most likely to be impacted by the cost measures, to ensure clinicians understand the measures and can provide meaningful feedback during measure development.

- We will continue to work to make clinicians more familiar with the measures through education and outreach activities, especially to clinicians who are most likely to be impacted by cost measures. For our measure development activities, especially for field testing and any educational webinars, we conduct outreach to both the general stakeholders and targeted outreach to clinicians. Aligning with our goal of providing more education activities, we also held a post-field cost measures field testing webinar to inform stakeholders of the development activities that have taken place since field testing, and demonstrate how their feedback was taken into consideration in the refinement of the measures. We expect to continue convening similar events in the future.

Accessing the Field Test Reports

Commenters reported issues with accessing the field test reports from the CMS Enterprise Portal, including difficulty with accessing the portal using specific web browsers, navigating the portal, and locating specific files.

- We will continue to explore options to simplify and streamline access to field testing information and reports, while providing reports to as many stakeholder clinicians as possible with the resources allocated for field testing. CMS is aware of the difficulties and issues some stakeholders experienced accessing their field test reports and is considering alternatives for providing reports in the future.

Supplemental Documentation

Commenters provided specific suggestions on potential improvements and additional information that should be included on each of the supplemental materials. Commenters also noted the importance of the measure specifications documents to be comprehensive but not overly lengthy and complex, noting that while the documents were detailed, the information provided is too overwhelming to be useful.

- We agree with the importance of providing informative materials on field testing, to ensure that stakeholders understand the purpose of field testing and the specifications of the measures. We appreciate the positive feedback received during field testing, especially in response to changes made for the October-November 2018 field testing and will review all feedback with CMS. We will continue to consider the stakeholder input received when designing and disseminating supplemental materials for future waves of measure development and field testing, and aim to strike a balance between providing

detailed information for those who are interested and higher-level information to serve as a summary.

Field Test Report Format

Commenters noted that while field test reports present useful information for understanding clinician performance, reducing their complexity could encourage more clinician participation. Commenters also provided specific suggestions on potential improvements and additional information that should be included on each of the field test reports.

- We appreciate the feedback from clinicians and stakeholders on the field test report templates, including comments on the overall presentation and content of the report and tab-specific comments, and the recommendations for improvement. We take into consideration the field testing feedback we receive on the templates and have taken steps to improve the templates based on previous field testing feedback received. We will continue to ensure the report is user-friendly, navigable, and contains accurate and actionable information that clinicians may use to learn about their performance. Our goal is to improve the field test reports to be even more actionable and easier to understand and we will continue to update the report format in future waves of measure development and field testing using the stakeholder input we receive.

Appendix A: Post-Field Testing Measure Refinements

This appendix documents the refinements made to the cost measures after the October-November 2018 field testing period. The measure-specific feedback included in Section 3 of this report were summarized and compiled after field testing and provided to the measure-specific workgroups and TEP for their consideration prior to a series of measure refinement webinars in November and December 2018. The post-field testing refinements made to the cost measures are listed in the following tables.

Table A1. Post-Field Testing Refinements for Acute Kidney Injury Requiring New Inpatient Dialysis

Acute Kidney Injury Requiring New Inpatient Dialysis	
Episode windows: pre-trigger and post-trigger periods	No Changes
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	<p><u>Added exclusion:</u></p> <ul style="list-style-type: none"> Exclude patients who have Medicare eligibility because of ESRD
Service Assignment	No Changes
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Added the following risk adjustors:</u></p> <ul style="list-style-type: none"> Glomerular Disease Frailty variables for dementia, skilled nursing facility visit, and home hospital bed Risk adjust for PAC use prior to an episode by risk adjusting the following: <ul style="list-style-type: none"> Recent Admission to an Inpatient Rehabilitation Facility (IRF) Recent Admission to a Skilled Nursing Facility (SNF) Recent Admission to Long-Term Care Hospital Recent Receipt of Home Health Services (HH)

Table A2. Post-Field Testing Refinements for Elective Primary Hip Arthroplasty

Elective Primary Hip Arthroplasty	
Episode windows: pre-trigger and post-trigger periods	No Changes
Triggers	<p><u>Edited triggers:</u></p> <ul style="list-style-type: none"> Remove CPT/HCPCS 27132 (conversion to THA) as trigger code
Sub-Groups	No Changes

Elective Primary Hip Arthroplasty	
Measure-Specific Exclusions	<p><u>Added exclusions:</u></p> <ul style="list-style-type: none"> • Exclude patients with congenital deformity of the hip • Exclude patients with osteomyelitis of the hip and femur (and remove osteomyelitis codes from inflammatory arthropathies) • Exclude patients with septic joint
Service Assignment	<p><u>Added services:</u></p> <p>Pre-Trigger:</p> <ul style="list-style-type: none"> • Assign hip imaging and cardiovascular tests within 30 days <p>Post-Trigger</p> <ul style="list-style-type: none"> • Assign sepsis related to total hip arthroplasty within 30 days • Assign sepsis unspecified within 7 days
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Edited the following risk adjustors:</u></p> <ul style="list-style-type: none"> • Set lookback period for all risk adjustors to 120 days to align with Knee Arthroplasty measure • Remove F11 (opioid related disorders) from high-risk dislocators and create new risk adjustor for that code alone • Refine coding for high-risk dislocators and inflammatory arthropathies to be more hip-specific • Combine risk adjustors for spine surgery, intervertebral disc disorders, and spinal stenosis into one risk adjustor for spinal disorders • Risk adjust for the following frailty indicators: recent all-cause admission, anemia, walking aid, home oxygen, dementia, wheelchairs, home hospital bed, nursing physician facility visits, home health, long term care hospital • Risk adjust for antiplatelet therapy • Add DGN D6832 to anticoagulant use risk adjustor • Remove Septic Joint as a risk adjustor

Table A3. Post-Field Testing Refinements for Femoral or Inguinal Hernia Repair

Femoral or Inguinal Hernia Repair	
Episode windows: pre-trigger and post-trigger periods	<ul style="list-style-type: none"> • No Changes
Triggers	<p><u>Edited triggers:</u></p> <ul style="list-style-type: none"> • Remove CPT/HCPCS 49659 (hernia repair procedure using an endoscope) and DGNs as trigger codes • Check for presence of DRG 350-352 (inguinal & femoral hernia procedures) for episodes occurring inpatient
Sub-Groups	No Changes
Measure-Specific Exclusions	<p><u>Added exclusion:</u></p> <ul style="list-style-type: none"> • Exclude episodes where there is another, more complex surgery on the same day
Service Assignment	<p><u>Added services:</u></p> <ul style="list-style-type: none"> • Assign bladder perforations/scrotal hemorrhage services within 7 days • Assign testicular pain services within 90 days • Assign other urologic complications' services within 30 days

Femoral or Inguinal Hernia Repair	
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Edited</u> the following risk adjustors:</p> <ul style="list-style-type: none"> • Risk adjust for strangulated/incarcerated hernia repair • Risk adjust for recent all-cause admission and dementia as frailty indicators • Risk adjust for IP by checking for presence of DRG 350-352 (inguinal & femoral hernia procedures) • Risk adjust for bilateral procedures • Risk adjust for concurrent major surgery via modifier 51/DRG • No longer risk adjust for American Society of Anesthesiologists Physical Status (ASA status)

Table A4. Post-Field Testing Refinements for Hemodialysis Access Creation

Hemodialysis Access Creation	
Episode windows: pre-trigger and post-trigger periods	<p><u>Changed</u> post-trigger period:</p> <ul style="list-style-type: none"> • Post-Trigger period: 90 days
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	No Changes
Service Assignment	<p><u>Removed</u> services:</p> <ul style="list-style-type: none"> • Remove pre-treatment catheter infections (within 60 days of the trigger) from pre-trigger service assignment • Remove placement of a new access from post-trigger service assignment
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Edited</u> the following risk adjustors:</p> <ul style="list-style-type: none"> • Remove non-specific vascular procedural codes (HCPCS/CPT: 37246, 37247, 37248, 37249) from the risk adjustor for Prior Treatment for Venous / Arterial Stenosis • Separate the risk adjustor "Prior Access Attempts" into two risk adjustor variables: (1) "Prior Fistula/Graft Placement" and (2) "Prior Fistula/Graft Use, with no Placement observed" • Extend the lookback period for the risk adjustors "Prior Fistula/Graft Placement" and "Prior Fistula/Graft Test Use, with no Placement observed" from 120 days to 180 days

Table A5. Post-Field Testing Refinements for Inpatient Chronic Obstructive Pulmonary Disease Exacerbation

Inpatient Chronic Obstructive Pulmonary Disease Exacerbation	
Episode windows: pre-trigger and post-trigger periods	No Changes
Triggers	<p><u>Excluded</u> trigger code:</p> <ul style="list-style-type: none"> • MS-DRG 207 Respiratory System Diagnosis W Ventilator Support 96+ Hours with ICD-DGN – Principal and ICD-10 DGN checks for COPD Exacerbation diagnoses)

Inpatient Chronic Obstructive Pulmonary Disease Exacerbation	
Sub-Groups	<p><u>Replaced field testing Sub-Groups with:</u></p> <ul style="list-style-type: none"> • COPD Exacerbation with No Non-Invasive Positive Pressure Ventilation (NIPPV) or Mechanical Ventilation (MV) • COPD Exacerbation with Non-invasive Positive Pressure Ventilation (NIPPV) < 96 hours without Mechanical Ventilation (MV) • COPD Exacerbation with Mechanical Ventilation < 24 hours • COPD Exacerbation with Mechanical Ventilation 24-96 hours
Measure-Specific Exclusions	<p><u>Added the following exclusions:</u></p> <ul style="list-style-type: none"> • Mechanical Ventilation (MV) > 96 hours • Non-invasive Positive Pressure Ventilation (NIPPV) > 96 hours • Patients Receiving Active Treatment for Lung Cancer
Service Assignment	<p><u>Edited the following service assignment:</u></p> <ul style="list-style-type: none"> • Do not assign services related to hip fracture and other sequelae of falls if they occur after discharge from hospitalization • Assign services related to inhaled medications • Do not assign services related to initial ambulance transport to the hospital • Do not assign services related to pneumothorax
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Added the following risk adjustors:</u></p> <ul style="list-style-type: none"> • Previous non-COPD admission in 31-120 days before the trigger • Previous non-COPD admission in the 30 days before the trigger • 11 frailty variables (dementia, wheelchair use, home hospital bed, anemia, advance care planning, history of falls, mild cognitive impairment, history of nursing physician facility visits, history of home health, history of long-term care hospital)

Table A6. Post-Field Testing Refinements for Lower Gastrointestinal Hemorrhage

Lower Gastrointestinal Hemorrhage	
Episode windows: pre-trigger and post-trigger periods	<p><u>Changed post-trigger period:</u></p> <ul style="list-style-type: none"> • Post-Trigger period: 35 days
Triggers	<p><u>Edited triggering logic:</u></p> <ul style="list-style-type: none"> • Remove DGN K550, K551 as trigger codes for medical DRGs 377-379 • For all trigger logic, look only at principal DGN on the trigger claim • Add additional trigger exclusions for identifying upper GI bleed: DGN K5501, K5502, K221, K20, K319, K3189, I85, I864, K228, K226, K838, and K8689 • Add trigger exclusion logic set for DRG 356-358 for interventional radiology with the same rules as for the medical DRGs 377-379
Sub-Groups	No Changes
Measure-Specific Exclusions	<p><u>Edited the following exclusions:</u></p> <ul style="list-style-type: none"> • As noted above under “triggers,” exclude episodes triggered by DRGs 356-358 for interventional radiology if they have diagnoses indicating upper GI bleed • No longer exclude colon cancer patients

Lower Gastrointestinal Hemorrhage	
Service Assignment	<p><u>Added additional assigned services:</u></p> <ul style="list-style-type: none"> Assign esophagogastroduodenoscopy (EGD) within 35 days Assign services related to MI within 15 days
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Edited the following risk adjustors:</u></p> <ul style="list-style-type: none"> Add risk adjustor for angiography without embolization Add risk adjustor for the following as frailty indicators: nursing physician facility visits, recent all-cause admission within 120 days, dementia, home oxygen, home hospital bed, LTCH Add risk adjustor for current admission for rectal bleeding Add risk adjustor for blood transfusion receipt during hospitalization within 48 hours

Table A7. Post-Field Testing Refinements for Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels

Lumbar Spine Fusion for Degenerative Disease, 1-3 Levels	
Episode windows: pre-trigger and post-trigger periods	No Changes
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	<p><u>Added the following exclusions:</u></p> <ul style="list-style-type: none"> Exclude any episode with a Spinal Fusion Except Cervical within 120 days prior to the episode Exclude any lumbar spine fusions that have diagnosis codes within DRGs 456-458 (Spinal Fusion with curvature, malignancy, infections, or extensive fusions)
Service Assignment	No Changes
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Added the following risk adjustors:</u></p> <ul style="list-style-type: none"> Add risk adjustors for the following frailty variables: Osteoarthritis, Anemia, Home Oxygen, Walking Aid, Dementia, Skilled Nursing Facility Visit, Wheelchair, Home Hospital Bed Risk adjust for recent hospitalization for DRG 551: Medical Back Problems within 120 days before the trigger

Table A8. Post-Field Testing Refinements for Lumpectomy, Partial Mastectomy, Simple Mastectomy

Lumpectomy, Partial Mastectomy, Simple Mastectomy	
Episode windows: pre-trigger and post-trigger periods	No Changes
Triggers	No Changes

Lumpectomy, Partial Mastectomy, Simple Mastectomy	
Sub-Groups	<p><u>Added sub-group:</u></p> <ul style="list-style-type: none"> Incorporate sentinel lymph node (SLN) biopsy into sub-groups, splitting the previous Unilateral Partial Mastectomy sub-group into Unilateral Partial Mastectomy with SLN and Unilateral Partial Mastectomy without SLN
Measure-Specific Exclusions	<p><u>Added exclusions:</u></p> <ul style="list-style-type: none"> Exclude all IP episodes from the measure Exclude episodes in which the beneficiary has a diagnosis of borderline personality disorder
Service Assignment	No Changes
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Added the following risk adjustors:</u></p> <ul style="list-style-type: none"> Shoulder contracture Presence of AICD/Pacemaker Chronic use of anticoagulants/antiplatelets Blindness

Table A9. Post-Field Testing Refinements for Psychoses / Related Conditions

Psychoses / Related Conditions	
Episode windows: pre-trigger and Post-trigger periods	<p><u>Changed post-trigger period:</u></p> <ul style="list-style-type: none"> Post-Trigger period: 90 days
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	No Changes
Service Assignment	No Changes
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Added the following risk adjustors:</u></p> <ul style="list-style-type: none"> 3 frailty variables (anemia, osteoarthritis, and nursing physician facility visits)

Table A10. Post-Field Testing Refinements for Non-Emergent Coronary Artery Bypass Graft (CABG)

Non-Emergent Coronary Artery Bypass Graft (CABG)	
Episode windows: pre-trigger and Post-trigger periods	No Changes
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	No Changes

Non-Emergent Coronary Artery Bypass Graft (CABG)	
Service Assignment	<p><u>Edited services:</u></p> <ul style="list-style-type: none"> • Assign the cost for infective endocarditis within 30 days of the trigger in the post-trigger period • Assign home health services if the principal diagnosis of the claim is strongly associated with CABG surgery (e.g., “Encounter for Surgical aftercare Following Surgery on the Circulatory System” and “Chronic Ischemic Heart Disease”) • Assign home health skilled nursing care if the principal diagnosis is strongly associated with CABG surgery whether it occurs in a skilled nursing facility or home health setting • Assign inpatient rehabilitation facility admissions that have principal diagnoses that are strongly associated with CABG surgery or are potential complications of CABG surgery and are new diagnoses (specifically stroke)
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><u>Edited the following risk adjustors:</u></p> <ul style="list-style-type: none"> • Home Oxygen • Nursing Facility Physician Visits • Add risk adjustors for the following: Recent All-Cause 30-Day Admissions, Wheelchair Use, Walker Use, Prior Home Health Services, and Outpatient Therapy

Table A11. Post-Field Testing Refinements for Renal or Ureteral Stone Surgical Treatment

Renal or Ureteral Stone Surgical Treatment	
Episode windows: pre-trigger and Post-trigger periods	<p><u>Changed post-trigger period:</u></p> <ul style="list-style-type: none"> • Post-trigger period: 30 days
Triggers	No Changes
Sub-Groups	No Changes
Measure-Specific Exclusions	<p><u>Added the following exclusion:</u></p> <ul style="list-style-type: none"> • Add exclusion for non-trigger codes for urologic procedures performed on the same day
Service Assignment	<p><u>Updated service assignments:</u></p> <ul style="list-style-type: none"> • Remove the impact of a secondary planned procedure (identified with modifier code 58) occurring in the post-trigger window of an episode triggered from the initial procedure (as is feasible to implement) • Assign costs for PAC services associated with the following diagnoses: <ul style="list-style-type: none"> ○ Z48816 Encounter for surgical aftercare following surgery on the genitourinary system ○ N390 Urinary tract infection, site not specified ○ N200 Calculus of kidney ○ N132 Hydronephrosis with renal and ureteral calculous obstruction N136 Pyonephrosis ○ N10 Acute pyelonephritis ○ N201 Calculus of ureter • Use a 7-day for post-trigger window for assigning IRF services • Use a 7-day for post-trigger window for assigning HH services

Renal or Ureteral Stone Surgical Treatment	
Measure-Specific Risk Adjustors (in addition to HCCs)	<p><i>Edited the following risk adjustors:</i></p> <ul style="list-style-type: none"> Removed AKI, ESRD, and CKD stages 4 and 5 as risk adjustors to reduce redundancy with standard HCCs

Table A12. Post-Field Testing Refinements for Medicare Spending Per Beneficiary (MSPB) Clinician

Medicare Spending Per Beneficiary (MSPB) Clinician	
Episode Window	No Changes
Index Hospitalization	No Changes
Attribution	No Changes
Service Exclusions	No Changes
Episode-level Exclusions	No Changes

Table A13. Post-Field Testing Refinements for Total Per Capita Cost (TPCC)

Total Per Capita Cost (TPCC)	
Candidate events	<ul style="list-style-type: none"> The primary care services list was refined to better reflect primary care services, and went from around 5200 codes to 3200 codes. The categories for primary care services have not changed.
Risk Window	No Changes
Attributable Clinicians	<ul style="list-style-type: none"> HCFA specialties eligible for attribution are those that can be reasonably be responsible for providing primary care <ul style="list-style-type: none"> Primary care specialties Internal medicine sub-specialties that frequently manage chronic patients with significant conditions in their areas of specialties along with other medical comorbidities Non-physician clinicians who often provide primary care services The HCFA specialties excluded from attribution were identified as not providing chronic care for significant medical conditions and fall into the following broad categories: <ul style="list-style-type: none"> Surgical sub-specialties Non-physicians without chronic management of significant medical conditions Internal medicine sub-specialties with additional highly procedural sub-specialization Internal medicine that practice primarily inpatient without chronic management Pediatricians who do not typically practice adult medicine
Attribution - Service Exclusions	No Changes

Total Per Capita Cost (TPCC)	
Specialty Adjustment	Added specialty adjustment

Appendix B: List of Commenters

This appendix provides an index of stakeholders who submitted a comment during the Field Testing Feedback Period. Though commenters who provided feedback and did not include their name or organization are not included in this table, their input has been included in the report.

Table B1. Stakeholders Providing Feedback on the October-November 2018 Field Testing

Name	Individual or Representative	Organization
Aaron Bridges	Representative	University of Texas Medical Branch
Adam Doyle	Individual	
Allison Madson	Representative	American Society of Cataract and Refractive Surgery
Alvia Siddiqi	Individual	
Amanda Melendez	Representative	AtlantiCare
Amy Brittan	Representative	Providence St Joseph Health
Ben Flores	Representative	Curators of the University of Missouri Columbia
Billie-jo Jary	Representative	St. Luke's Cataract & Laser Institute
Brad Johnson	Individual	
Cass Jones	Representative	Pinnacle Health Medical Group
Charles B. Ross	Individual	
Chris Schreier	Representative	Ingleside Medical Associates
Christopher Smolock	Individual	
Claudia Murray	Representative	MSN Healthcare Solutions
Clifford Sales	Individual	
Dale Bratzler	Representative	OU Physicians
David Smith	Representative	United Imaging Consultants, LLC
Denise Straus	Representative	North Georgia Pain Clinic
Donald E Fry	Representative	American College of Surgeons
Donald Weller	Individual	
Dost Ongur	Individual	
Edward Sun	Individual	
Elise Davis-McFarland	Representative	American Speech-Language Hearing Association
Eliza Browne	Individual	
Erica Saito	Representative	Northwestern Memorial HealthCare
Frank W. Brown	Individual	
Gale Tang	Individual	
Garry Brydges	Representative	American Association of Nurse Anesthetists
Jabbar Fazeli	Individual	
Jacob Ballon	Individual	
Jacqueline Boskovich	Individual	
Jaimie Sigeske	Representative	Independence Pain Associates
Jan Donis	Representative	University of Pittsburgh Medical Center
Jennifer Lamprecht	Representative	Sanford Health
Jessica Roth	Representative	American Gastroenterological Association
Jill Pavliscak	Representative	Mills Peninsula Medical Group Independent Physician Association
Jill Rathburn	Representative	Society for Vascular Surgery
Jodi Roehm	Representative	Center for Diagnostic Imaging
Jon Strasser	Individual	
Katherine Ast	Representative	American Academy of Hospice and Palliative Medicine

Name	Individual or Representative	Organization
Keith Horvath	Representative	The Society of Thoracic Surgeons, American Association of Thoracic Surgery
Kim Sweet	Representative	ScrogginsGrear, Inc.
Laura Springer	Representative	ApolloMD
Maria Mazzoccoli	Individual	
Michael Stoner	Individual	
Mike MacKinnon	Individual	
Mohammad Alsolaiman	Individual	
Nick Fry	Individual	
Pam Hayden	Representative	North American Spine Society
Pam Kassing	Representative	American College of Radiology
Patricia Lombardo	Representative	
Patrick Ryan	Individual	
Paul O'Donnell	Individual	
Paul White	Individual	
Paula Shireman	Individual	
Philip Schneider, M.D.	Representative	North American Spine Society
Pierre Millet	Individual	
Rachel Groman	Representative	American Association of Neurological Surgeons
Ravishankar Hasanadka	Individual	
Rebecca Yowell	Representative	American Psychiatric Association
Rhonda B Smith	Representative	Novant Health Medical Group
Rob Zipper	Representative	Society of Hospital Medicine
Robert Larson	Individual	
Robert T. Still	Representative	Radiology Business Management Association
Rocco Ciocca	Individual	
Ronald M Burd	Individual	
Ronald Purnell	Representative	Eye Care of Maine
Saira Saqib	Individual	
Saqib Zia	Individual	
Sarah Fite	Representative	Allied Physicians of Michiana
Sarah Warren	Representative	
Scott Simon	Individual	
Sharda Kohli		
Sharon Grutman	Representative	The American Society of Breast Surgeons
Sharon McIlrath	Representative	American Medical Association
Sheila E. Crowe	Representative	American College of Gastroenterology, American Gastroenterological Association, American Society of Gastrointestinal Endoscopy
Steven A. Edmundowicz	Representative	American College of Gastroenterology, American Gastroenterological Association, American Society of Gastrointestinal Endoscopy
Sunanda V. Kane	Representative	American College of Gastroenterology, American Gastroenterological Association, American Society of Gastrointestinal Endoscopy
Susan Kay	Representative	CAH
Taylor Slack	Representative	
Taylor Smith	Individual	
Thomas S. Brodar, D.C.	Individual	
Willaim Thorwarth	Representative	American College of Radiology
Yazan Duwayri	Individual	

Appendix C: Details on Recommendations by ACG/AGA/ASGE

This appendix provides supplementary information for the suggested measure revisions to the Lower Gastrointestinal Hemorrhage episode-based cost measure by the American College of Gastroenterology (ACG), the American Gastroenterological Association (AGA), and the American Society of Gastrointestinal Endoscopy (ASGE).

Table C1. Upper GI Bleed Principal Diagnoses Excluded by Proposed Trigger Code Updates

ICD-10 DGN	Code Descriptor
K250	Acute gastric ulcer with hemorrhage
K252	Acute gastric ulcer with both hemorrhage and perforation
K254	Chronic or unspecified gastric ulcer with hemorrhage
K256	Chronic or unspecified gastric ulcer with both hemorrhage and perforation
K260	Acute duodenal ulcer with hemorrhage
K262	Acute duodenal ulcer with both hemorrhage and perforation
K264	Chronic or unspecified duodenal ulcer with hemorrhage
K266	Chronic or unspecified duodenal ulcer with both hemorrhage and perforation
K270	Acute peptic ulcer, site unspecified, with hemorrhage
K272	Acute peptic ulcer, site unspecified, with both hemorrhage and perforation
K274	Chronic or unspecified peptic ulcer, site unspecified, with hemorrhage
K276	Chronic or unspecified peptic ulcer, site unspecified, with both hemorrhage and perforation
K280	Acute gastrojejunal ulcer with hemorrhage
K282	Acute gastrojejunal ulcer with both hemorrhage and perforation
K284	Chronic or unspecified gastrojejunal ulcer with hemorrhage
K286	Chronic or unspecified gastrojejunal ulcer with both hemorrhage and perforation
K2901	Acute gastritis with bleeding
K2921	Alcoholic gastritis with bleeding
K2931	Chronic superficial gastritis with bleeding
K2941	Chronic atrophic gastritis with bleeding
K2951	Unspecified chronic gastritis with bleeding
K2961	Other gastritis with bleeding
K2971	Gastritis, unspecified, with bleeding
K2981	Duodenitis with bleeding
K2991	Gastroduodenitis, unspecified, with bleeding
K31811	Angiodysplasia of stomach and duodenum with bleeding
K3182	Dieulafoy lesion (hemorrhagic) of stomach and duodenum
K920	Hematemesis

When suggesting revisions to the trigger exclusions, ACG, AGA, and ASGE noted that not all of the following causes of upper GI bleed are captured by the current trigger exclusions: (1) peptic ulcer disease, (2) esophagitis, (3) gastritis/gastropathy and duodenitis/duodenopathy, (4) complications of portal hypertension (e.g., varices and portal hypertensive gastropathy), (5) vascular lesions (e.g., angiodysplasia, Dieulafoy's lesion, gastric antral vascular ectasia), (6) trauma or iatrogenic causes (e.g., Mallory Weiss syndrome, Cameron lesions and aortoenteric fistulas), (7) upper GI tumors, (8) hemobilia, and (9) hemosuccus pancreaticus.