

Simple Pneumonia with Hospitalization Comprehensive Reevaluation Workgroup Webinar Meeting Summary

MACRA Episode-Based Cost Measures: Clinician Expert Workgroups
Reevaluation Workgroup Webinar, October 12, 2022
January 2023

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Project Overview

The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen, LLC to develop and maintain episode-based cost measures for potential use in the Merit-based Incentive Payment System (MIPS) to meet the requirements of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Acumen's measure development approach involves convening clinician expert panels ("workgroups") to provide input in cycles of development ("Waves"). As needed, workgroups are reconvened to provide input on measure maintenance.

Eight episode-based cost measures were added to the MIPS cost performance category in the 2019 performance year 2019 and are now being considered for comprehensive reevaluation as they've been in MIPS for 3 years. The purpose of comprehensive reevaluation is to ensure that measures continue to meet criteria for importance, scientific acceptability, and usability in line with the Measures Management System (MMS) Blueprint. In this process, we holistically review the measure, seek public comment, and consider whether any changes need to be made to measure specifications.

The following Wave 1 episode-based cost measures were selected for comprehensive reevaluation based on information gathering, public comments,¹ and discussions with CMS:

- (i) Routine Cataract Removal with IOL Implantation
- (ii) Simple Pneumonia with Hospitalization

¹ For a summary of comments we received during the public comment period, refer to the [Wave 1 Comprehensive Reevaluation Public Comment Summary Report \(PDF\)](https://www.cms.gov/files/document/wave-one-public-comment-summary-report.pdf) (<https://www.cms.gov/files/document/wave-one-public-comment-summary-report.pdf>).

- (iii) ST-Elevation Myocardial Infarction with Percutaneous Coronary Intervention (STEMI-PCI)

We held a nomination period for workgroup members between August 19, 2022, and September 9, 2022. The workgroups are composed of clinicians with expertise directly relevant to the selected episode-based cost measures. Workgroups were finalized in October 2022, and they provided detailed input on potential updates to the selected episode-based cost measures groups during their webinars from October 6 to 12, 2022. For Wave 1 Comprehensive Reevaluation, all workgroup meetings will be held virtually. The workgroup discussions informed updates to the measure specifications to be used for a public comment period, which is currently slated for early 2023.

Simple Pneumonia with Hospitalization Comprehensive Reevaluation Workgroup Webinar, October 12, 2022

This meeting summary document outlines the purpose, discussion, and recommendations from the Simple Pneumonia with Hospitalization Comprehensive Reevaluation workgroup webinar. Section 1 provides an overview of the webinar goals and process. Section 2 summarizes the discussion and recommendations from the workgroup. Section 3 is an appendix that describes the materials and information provided to workgroup members prior to and at the beginning of the webinar as preparation for discussion on detailed measure specifications.

1. Overview

The goals of the Simple Pneumonia with Hospitalization Comprehensive Reevaluation workgroup webinar on October 12, 2022, were the following:

- (i) Provide input to refine a cost measure for potential continued use in MIPS that can accurately distinguish between good and poor performance among clinicians in terms of cost efficiency
- (ii) Consider findings from information gathering conducted since initial development (e.g., empirical analyses, public comments, literature reviews) and measure monitoring from measure implementation
- (iii) Provide input on defining the patient cohort, how to account for subpopulations to ensure that the measure allows for meaningful clinical comparisons, and categories of services to assign to the episode

The meeting was held online via webinar and attended by all 5 workgroup members. The webinar was facilitated by an Acumen moderator, Walter Park. The Simple Pneumonia with Hospitalization Comprehensive Reevaluation workgroup chair was Carolyn Fruci, who also facilitated meeting discussions. The MACRA Episode-Based Cost Measure Workgroup Composition List will contain the full list of members, including names, professional roles, employers, and clinical specialties; it will be posted on the MACRA Feedback Page.²

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

² The composition list will be posted on the [MACRA Feedback Page \(https://www.cms.gov/Medicare/Quality-Payment-Program/Quality-Payment-Program/Give-Feedback\)](https://www.cms.gov/Medicare/Quality-Payment-Program/Quality-Payment-Program/Give-Feedback).

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

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

2. Summary of Sessions and Discussion

This section is organized based on meeting sessions and describes workgroup members' discussions and recommendations. Section 2.1 describes workgroup member discussions and recommendations on defining the patient cohort. Section 2.2 outlines workgroup members' discussions and recommendations about methods to account for heterogeneity. Section 2.3 summarized discussions and recommendations related to assigning clinically related services. Section 2.4 provides an overview of the next steps for the measure comprehensive reevaluation process.

2.1 Defining the Patient Cohort

Acumen reviewed the methodology for constructing an episode-based cost measure, with a focus on defining the patient cohort. The current patient cohort is defined by Simple Pneumonia & Pleurisy (MS-DRGs 193-195). Episodes are currently divided into mutually exclusive and exhaustive subgroups based on complexity; each MS-DRG is subgrouped³ so that episodes are only compared to other episodes within the same MS-DRG.

Acumen presented analyses on trends in inpatient respiratory care and measure coverage before and after the start of the COVID-19 pandemic. There was a sharp decline in inpatient stays in MS-DRGs 193-195 for Simple Pneumonia & Pleurisy, and a corresponding sustained decrease in the number of episodes and attributed clinicians and clinician groups for this measure. At the same time, there has been a large increase in the number of inpatient stays for Respiratory Infections and Inflammations (MS-DRGs 177-179). The majority of inpatient stays within base DRG 177 have at least one diagnosis that defines base DRG 193, suggesting it may be appropriate to expand the patient cohort to include MS-DRGs 177-179 to continue to capture episodes for pneumonia and related respiratory conditions.

The workgroup reached verbal consensus to add MS-DRGs 177-179 as trigger codes, noting that this change would ensure the measure continues to be impactful and measure intended care. The workgroup further discussed approaches to account for expected cost differences between base DRGs 177 and 193. The workgroup was generally in agreement with Acumen's suggested approach to create subgroups for base DRGs 177 and 193, and then to risk adjust⁴ by MS-DRG within each base DRG.

³ Subgrouping is a method that's intended for when we would want to compare episodes only with other similar episodes within the same subgroup. This approach is used when subgroups are very different from one another, and each subgroup requires its own risk adjustment model. Since each subgroup will have its own risk adjustment model, the size of each subgroup should be sufficiently large.

⁴ Risk adjusting is a method to account for the case-mix of patients and other non-clinical characteristics that influence complexity. It's meant to be used for subpopulations that make up a large share of patients who have a

Key Takeaways from Discussion and/or Polls for Defining the Patient Cohort:

- Members recommended to update the trigger logic to include MS-DRGs 177-179 as trigger codes.
- Members recommended to create subgroups for base DRG 177 and base DRG 193, and risk adjust by MS-DRGs within each base DRG.
- The reevaluated version of the measure will be referred to as *Respiratory Infection Hospitalization*.

2.2 Accounting for Patient Heterogeneity

Acumen reviewed methods used to account for patient heterogeneity and to allow for meaningful clinical comparisons:

- (i) subgrouping
- (ii) risk adjustment
- (iii) exclusion⁵
- (iv) monitoring⁶

The current specifications use a default risk adjustment model to account for clinical complexity, and also include additional measure-specific risk adjustment and exclusion variables. The workgroup discussed whether any refinements should be made to the current risk adjustment and exclusion variables, and what additional changes might be needed if the patient cohort is expanded to include MS-DRGs 177-179.

2.2.1 *Modifying current measure-specific exclusions*

Acumen presented analyses on the frequency and cost profile of excluded subpopulations, and asked the workgroup to consider whether these subpopulations should continue to be excluded. If the workgroup no longer felt the exclusion was warranted, the subpopulation could either be added to the measure and accounted for via the standard risk adjustment model or via the addition of new measure-specific risk adjustment variables.

Principal diagnoses on the inpatient trigger claim

The measure currently excludes episodes for certain conditions indicated as a principal diagnosis on the trigger inpatient claim:

- Epidemic Myalgia
- Fibrothorax
- Influenza due to Avian Flu
- Other Specified Pleural Conditions
- Pleural Condition Unspecified
- Pleural Plaque with Presence of Asbestos
- Pleural Plaque without Asbestos
- Pleurisy

characteristic that's outside of the attributed clinician's reasonable influence. Risk-adjusted cost measures compare observed episode spending to an expected episode spending (predicted by a risk adjustment model).

⁵ Excluding is a method in which we exclude certain patients or episodes to address issues with patient heterogeneity. This approach should be used when the subpopulation affects a small, unique set of patients in which risk adjustment wouldn't be sufficient to account for their differences in expected cost.

⁶ Monitoring is a method in which we gather additional data to see how best to account for factors resistant to the other methods specified above.

Some workgroup members noted that these exclusions are appropriate and don't need to be changed as the conditions are rare. Others noted that due to the low frequency and similar cost profiles to other episodes, these subpopulations could be included in the measure. Members discussed avian flu, noting that while there's no real difference in clinical care from other flus, it's typically infrequent, with some regional variation.

Exclusions that overlap with Hierarchical Condition Category (HCC) risk adjustors

The workgroup considered patient subpopulations which are currently excluded from the measure, but are included as risk adjustors in the standard CMS-HCC risk adjustment model used across cost measures:

- AIDS (HIV, 200 CD4#) (HCC1: HIV/AIDS)
- Borderline personality disorder (HCC60: Personality disorders (updated HCC model))
- Immunosuppressed/ immunocompromised (HCC47: Disorders of immunity)
- Lung cancer/metastatic cancer to lung (C78.00) (HCC9: Lung and other severe cancers)
- Patients receiving systematic chemotherapy or radiation therapy for cancer (HCC8: Metastatic cancer and acute leukemia; HCC9: Lung and other severe cancers; HCC10: Lymphoma and other cancers; HCC11: Colorectal, bladder, and other cancers; HCC12: Breast, prostate, and other cancers and tumors)
- Cystic fibrosis, sickle cell, cerebral palsy (HCC46: Severe hematological disorders; HCC110: Cystic fibrosis)
- Transplant patients (HCC186: Major organ transplant or replacement status)
- Bronchiectasis (HCC112: Fibrosis of Lung and Other Chronic Lung Disorders)
- Other interstitial lung diseases (HCC112: Fibrosis of Lung and Other Chronic Lung Disorders)
- Pancytopenia (HCC46: Severe hematological disorders; HCC47: Disorders of immunity)
- Pulmonary fibrosis (HCC112: Fibrosis of Lung and Other Chronic Lung Disorders)
- Restrictive lung disease (HCC40: Rheumatoid Arthritis and inflammatory connective tissue disease; HCC112: Fibrosis of Lung and Other Chronic Lung Disorders)

Members noted that observed costs were generally similar to non-excluded episodes, and that patients with these conditions could be included in the measure accounted for via the standard risk adjustment model. Acumen noted that while some of these conditions could result in other, unrelated costly care (e.g., cancer treatments), the service assignment rules also act as a form of risk adjustment, such as by only including costs of services related to the episode.

Overall, the workgroup didn't express strong preference for how to address these conditions, although members did support removing the exclusion for cystic fibrosis, sickle cell, and cerebral palsy and accounting for this patient population via the standard risk adjustment model.

Other current exclusions

Workgroup members discussed other conditions that are currently excluded, but don't map to a specific HCC:

- Chest trauma
- Chest wall myopathy
- Discharged against medical advice
- Do-not-resuscitate (DNR)
- Long-term steroid use
- Adverse effects of glucocorticoids and synthetic analogues

The workgroup hypothesized that the DNR subpopulation has a higher mean observed cost since many of those patients are elderly or seriously ill. Since the measure already adjusts for HCCs that could lead to serious illness, it may not be necessary to exclude DNR patients. Additionally, the workgroup noted DNR patients still receive full treatment for pneumonia and their treatment wouldn't be meaningfully different than that of other patients. Our team confirmed that no other cost measures exclude or risk adjust for patients with DNR; one important note is that DNR is identified through diagnosis codes in the 120-day lookback period, which may or may not be known to the clinician who is providing treatment for the trigger inpatient hospitalization. The workgroup also indicated we should consider removing exclusions for more commonly occurring subpopulations.

2.2.2 Modifying current measure-specific risk adjustment variables

The workgroup discussed potential refinements to reduce redundancy in the risk adjustment model and to simplify the measure specifications. The measure currently includes 10 risk adjusters in addition to HCCs:

- Acid-Base Disorders
- Asthma
- Dementia
- Limited mobility / wheelchairs / paralysis
- Long-Term Acute Care within 30 days
- Pleural Effusion / Thoracentesis
- Prior Oxygen Use/Respiratory Failure

Notably, Chronic Kidney Disease (CKD) 3 and 4 is included in the updated CMS-HCC risk adjustment model, and is redundant. Another potential update would be to combine categories for recent hospitalizations, so that there's a single risk adjustment variable for hospitalizations for congestive heart failure (CHF), Asthma/Chronic Obstructive Pulmonary Disease (COPD), and pneumonia, or to combine these as a recent all-cause hospitalization adjuster.

2.2.3 Accounting for MS-DRGs 177-179

Workgroup members also discussed whether adding MS-DRGs 177-179 would require additional updates to account for patient heterogeneity. For example, members discussed whether there might be additional conditions present in MS-DRGs 177-179 that wouldn't have been included in MS-DRGs 193-195 and wouldn't be sufficiently accounted for via DRG subgrouping and risk adjustment.

Workgroup members discussed whether there's a need to account for COVID-19 hospitalizations, as the overwhelming majority of COVID-19 pneumonia stays are in MS-DRG 177 compared to the lower severity MS-DRGs 178 and 179. COVID-19 pneumonia stays aren't captured in the current MS-DRGs that define the patient cohort (193-195). Within MS-DRGs 177-179, costs differ based on whether or not a patient has a COVID diagnosis on the inpatient trigger claim. Members briefly discussed whether to add a risk adjustment variable for COVID-19, but didn't reach a consensus. Members expressed interest in risk-adjusting by COVID-19 vaccination because this would be outside the influence of the attributed clinician, and unvaccinated patients may be sicker than those who are vaccinated. Acumen noted that Medicare claims data doesn't currently have the information necessary to include vaccination status as a risk adjustment variable. For example, vaccines provided during community-based vaccine drives may not be documented in claims data, and there isn't a diagnosis code for vaccine status.

The workgroup also questioned whether aspiration pneumonia, or factors that may increase the risk of aspiration pneumonia, could lead to increased cost. The workgroup also noted that increased risk for aspiration pneumonia due to dysphagia may already be accounted for via the standard HCC risk adjustment (e.g., dementia, neurocognitive disorders). Following the meeting, Acumen conducted a preliminary analysis and found that episodes with a primary diagnosis for aspiration pneumonia within base DRG 177 have a lower mean observed inpatient stay cost and lower mean observed 30-day all costs than non-aspiration pneumonias, suggesting that additional adjustment may not be necessary.

Additionally, the workgroup discussed methods to account for potential cost differences associated with respiratory support. The current measure specifications exclude intubated patients who receive mechanical ventilation services. However, intubated patients aren't captured under DRGs 193 or 177. The International Classification of Diseases (ICD)-10 procedure codes for mechanical ventilation are used to define DRG 207. That is, a patient with pneumonia or a respiratory condition who requires mechanical ventilation won't be in either base DRG 193 or 177. The workgroup considered whether to remove this exclusion to simplify the specifications. The workgroup also discussed other types of respiratory support (e.g., BiPap, high flow nasal canula), and whether these services may be associated with higher episode costs for reasons outside of a clinician's reasonable influence. For example, patients with certain comorbid conditions or risk factors may be more likely to require respiratory support. The measure specifications already account for many comorbid conditions and risk factors via the standard risk adjustment model. The workgroup generally agreed that the specifications shouldn't include any additional adjustments for these other types of respiratory support.

Key Takeaways from Discussion and/or Polls for Accounting for Patient Heterogeneity:

- Members recommended retaining many of the current measure-specific risk adjustment variables and exclusions.
- Members recommended that certain subpopulations no longer be used as measure-specific risk adjustment variables and exclusions, and instead be accounted for via the standard risk adjustment model.
- Members recommended that asthma/ COPD/ recent pneumonia hospitalizations be combined with CHF into a single risk adjustment variable and expanded to include all-cause recent hospital admission.
- Members recommended that the measure should include risk adjustment for episodes with COVID-19 as the principal diagnosis on the inpatient trigger claim.
- Members recommended that the measure should remove the exclusion for intubated patients to simplify the specifications.

2.3 Identifying Clinically Related Services

In this session, Acumen presented considerations for service assignment rules. Services are attributed to a clinician when they can reasonably influence occurrence, intensity, or frequency. Workgroup members considered whether there should be any changes to the service assignment rules if MS-DRGs 177-179 are added to the measure. The workgroup asked whether rehabilitation services (e.g., physical therapy, speech language therapy) are included; Acumen clarified they're included for certain diagnoses and within certain timing restrictions.

Key Takeaways from Discussion and/or Polls for Identifying Clinically Related Services

- Members didn't recommend changes to service assignment rules.

2.4 Next Steps

In the last session, Acumen provided an overview of the next steps. After the meeting, Acumen distributed the Comprehensive Reevaluation Webinar Poll to gather input from members on the discussions held during the webinar. Acumen will operationalize input for the measure specifications based on Comprehensive Reevaluation Webinar Poll results and follow up with workgroup members with more information about the next steps in the measure development process. Additionally, the revised measure specifications will be made available for public feedback in early 2023.

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

3.1 Introduction

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

3.2 Overview of Meeting Materials

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

- Agenda and Slide Deck, which outlined the topics and process used for the webinar, including embedded empirical analysis results
- Measure specifications (Measure Information Form, Measure Codes List), which were a reference for the current measure specifications
- Investigation workbook, which presented detailed findings from empirical analyses:
 - Service Utilization over Time Analysis, which lists the top 200 most frequent services for each claim setting across episodes for the draft version of the measure along with various metrics regarding those services (e.g., share of episodes with that service, average cost of the service per episode, share of attributed clinicians who furnished the service).

The materials shared were based on analyses run on current measure specifications and informed by prior Wave 1 development and maintenance activities.

3.3 Overview of Cost Measure Comprehensive Reevaluation

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

- The activities done to date for the comprehensive reevaluation of selected episode-based cost measures, including the Wave 1 Reevaluation public comment period and information gathering
- The goals of the meeting and timeline of activities for Wave 1 measures
- A brief recap of the Quality Payment Program and episode-based cost measures for MIPS
- A recap on the different sources of information for the workgroup to consider in addition to their clinical expertise, including information gathering, public comments, and analyses and data

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