

Emergency Medicine Service Assignment and Refinement (SAR) Meeting Summary

MACRA Episode-Based Cost Measures: Clinician Expert Workgroups

SAR Webinar, September 1, 2021

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Project Overview

The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen, LLC to develop episode-based cost measures for potential use in the Merit-based Incentive Payment System (MIPS) to meet the requirements of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Acumen's measure development approach involves convening clinician expert panels to provide input in cycles of development ("Waves").¹ In Wave 4, instead of the typical Clinical Subcommittee (CS) process for episode group prioritization and selection, we obtained stakeholder input on candidate clinical areas and episode groups through a public comment period from December 16, 2020, to February 5, 2021.² This approach provided flexibility for a wider range of stakeholders to participate around their schedule. This approach will be revisited for future Waves of development. The prioritization criteria used to identify strong candidate episode groups and concepts were developed based on input from our technical expert panel (TEP), Person and Family Engagement (PFE), CS, and Clinician Expert Workgroups ("workgroups"). The following Wave 4 episode groups were finalized based on the prioritization criteria, public comments received, and discussions with CMS: (i) Emergency Medicine, (ii) Heart Failure, (iii) Low Back Pain, and (iv) Major Depressive Disorder.

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

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

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

again for a Service Assignment and Refinement (SAR) Webinar to revisit the specifications recommended during the initial meeting and refine the measures prior to national field testing. For Wave 4, all workgroup meetings will be held virtually. The workgroups will convene for a third meeting to continue measure specification and refinement discussions after a national field test, currently slated for early 2022.

Emergency Medicine SAR Webinar, September 1, 2021

The Emergency Medicine workgroup met on September 1, 2021, to continue building out the specifications for the measure. The meeting was held via webinar and 13 of the 18 workgroup members attended.³ The webinar was facilitated by an Acumen moderator, Suzann Pershing, and the workgroup chair, Susan Nedza. Person and Family Partner (PFP) representative Libby Hoy presented findings from discussions with a broader group of PFPs. Members of the public also attended with a listen-only line for transparency into the measure development process.

This document summarizes the discussions from the 3-hour virtual meeting. Section 1 discusses the findings from PFPs about lived experience with emergency department (ED) visits. Section 2 details discussion on how ED visits are stratified into clinically homogenous categories, termed “Visit Types,” for comparison and the workgroups discussion about modifying the definitions. Section 3 describes refinements to the measure to address specific patient cohorts, particularly focusing on how to account for patients with transfers from various settings, observation stays, and subsequent hospital admissions. Section 4 discusses assigning services to the measure. Section 5 summarizes the next steps in the measure development process. 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.

1. Person and Family Partner (PFP) Findings and Discussion

Libby Hoy presented the PFP findings from focus groups of 4 PFPs with ED visit experience. These discussions built on the earlier discussions prior to the June 2021 workgroup webinars and focused on the types of clinicians involved and care trajectory coordination.

PFPs identified a range of care provided by different members of their care team at various points during their ED visit experience. ED clinicians were identified as managing the PFPs’ emergency medicine observation care in many cases. Some experienced transfer and/or admissions to acute care hospitals. Throughout the care trajectory, some PFPs experienced changes in their initial diagnosis as additional testing was conducted. PFPs acknowledged the importance in care team coordination between these settings and some noted challenges in timeliness and communication of their transfer experience. Improved thoroughness of examinations and explanation of tests/outcomes were important to the PFPs to help reduce anxiety and take partnership in their health care.

The PFPs also discussed their experience with post-ED referrals and services. Many were referred to primary care providers (PCPs), surgeons, and/or specialists after their care. While some experienced timely referrals for follow-up appointments, a few experienced delays in care due to difficulties finding a specialist that would accept them. Additionally, PFPs found it hard to

³ CMS, “MACRA Episode-Based Cost Measures: Wave 4 Clinician Expert Workgroup Composition (Membership List)” (<https://www.cms.gov/files/document/wave-4-measure-specific-workgroup-composition-list.pdf>).

communicate the details of their ED visit to subsequent specialists. This stressed the importance of:

- Providing the patients with written discharge instructions
- Considering health literacy when explaining the findings

Some PFPs reported that rural communities:

- Don't have access to electronic health records (EHRs)
- Need well-understood, discharge instructions to take to subsequent care referrals

2. Refinements to Emergency Department Visit Types

This session continued discussion from the first workgroup meeting in June 2021 on how to comprehensively stratify ED visits into comparable groups. The discussion began with the importance of a comprehensive and inclusive categorization, the guiding principles to define bounds between the ED Visit Types, and how to apply a hierarchy that yields a single categorization (Section 2.1). The session then summarized the specific improvements to the draft Visit Type definitions recommended by the workgroup (Section 2.2).

2.1 Strategy to Defining ED Visit Types

The first portion of this session outlined the purpose of creating ED Visit Types and continued with discussion on what framework should be used to define them. The goal of the measure is to capture the universe of ED care. As such, the measure must account for a diverse set of conditions. What Acumen has termed “ED Visit Types” is a way to sub-group episodes into more clinically homogenous categories based on the International Classification of Diseases, 10th revision (ICD-10) diagnosis codes (which include both diagnoses and symptoms) found during the ED visit. Ultimately, costs for patients within a resulting ED Visit Type will only be compared to the expected spending for that visit type (i.e., separate risk adjustment models are estimated for each ED Visit Type).

Workgroup members reviewed existing ways ED visits have been categorized in other models including the American College of Emergency Physicians' (ACEP) Acute Undifferentiated Conditions Model (AUCM) and the Johns Hopkins Adjusted Clinical Group (ACG) System. Members noted that while the definitions of these models can be appropriate within their purpose and context, they may not directly translate to the goals of the cost measure. For example, some of these models aren't comprehensive of all visit types. Still, this environmental scan was valuable in understanding which dimensions (e.g., body systems, etiology, and symptoms) could be considered in drafting exhaustive categories within the universe of ED visits.

Prior to the meeting, Acumen distributed a draft version mapping ED Visit Types. There was general support of the draft ED Visit Types as a starting point, though the workgroup acknowledged that additional refinements were needed. The draft specifications categorized nearly 97% of ED visits.

Lastly, Acumen shared that categorizations based on ICD-10 diagnosis codes can result in a single episode having diagnoses that satisfy the mapping for multiple ED Visit Types, since many diagnoses are reported throughout ED claims. The workgroup discussed the need to create a hierarchy. Acumen shared results for the mean episode cost by ED Visit Type and recommended a hierarchy that would assign an episode with multiple ED Visit Types the

categorization of highest cost. The workgroup reviewed this resulting hierarchy and generally supported the approach, though they acknowledged that the hierarchy will need additional review to observe changes that result from edits to the ED Visit Type definitions and service assignment.

2.2 Modifications to ED Visit Types

The discussion of this session concluded with specific review of the draft ED Visit Types. The recommended were included in the post-webinar poll. The detailed edits and observations are summarized in the key takeaways below.

Key Takeaways from Discussion and/or Polls for Refinements to Emergency Department Visit Types:

- Members understood the need for the measure to be comprehensive of the universe of ED visits and agreed with the approach to sub-group the measure into more clinically homogenous categorizations (i.e., ED Visit Types)
- Applying a hierarchy between ED Visit Types defined by highest resource use (i.e., cost) was generally accepted, though members asked to review the results once edits had been applied to the visit type definitions and service assignment
- A few members noted the draft list of ED Visit Types was an appropriate starting point and workgroup members were polled on the following edits and comments:
 - Medical Care Follow-Up and Complications:
 - Members noted this visit type was more representative of mostly complications and should be renamed to “Complications”
 - Members discussed that the Complications visit type contained codes where the ED clinician would be intercepting care midway through a patient’s care trajectory and recommended it be excluded (~1.7% to 1.9% of episodes)
 - Fracture:
 - Members reviewed codes and noted it was mostly extremity/small fracture, which would be an appropriate scope
 - Members identified femur fracture as more severe and recommended it be moved to “Major or Head Trauma”
 - Major or Head Trauma:
 - Members recommended including femur fracture
 - Trauma: Minor or Unclear Severity
 - Members identified the scope of codes as mostly injury codes; they noted open wound of hip and thigh are appropriate, but they recommended not to include open fractures
 - Members discussed the severity of “adult and/or child abuse, neglect and other maltreatment” and recommended it be moved to “Major or Head Trauma” if it’s found to co-present with more resource-intensive diagnoses
 - Members discussed whether early complications of trauma (not elsewhere classified) should be kept in “Trauma: Minor or Unclear Severity” or moved to “Medical Care Follow Up and Complications”; however, they agreed to remove the “Medical Care Follow Up and Complications” visit type
 - Shortness of Breath:
 - Members considered if the scope of this visit type should distinguish between upper and lower respiratory
 - “Shortness of Breath” was evaluated in conjunction with “Chest Pain”; the codes were observed to be more closely related to respiratory rather than other conditions that can have a presentation symptom of shortness of breath

- Members recommended defining the scope and renaming to “Respiratory”
- In light of the scope definition, members recommended moving influenza to “General Infection”
- Chest Pain:
 - “Chest Pain” was evaluated in conjunction with “Shortness of Breath”; the codes in “Chest Pain” appeared to have a better defined scope of non-respiratory chest pain
 - Members recommended renaming it to “Non-Respiratory Chest Pain” and ensuring respiratory isn’t included
- General Infection:
 - Members focused on the sepsis code and thought it should be aggregated with other sepsis codes and signs specifically associated with systematic inflammation/infection, and that shock be moved to its own Visit Type
 - Members requested that the Sepsis episode-based cost measure be referenced in creating the new “Sepsis” ED Visit Type
- Altered Mental State:
 - Members discussed how broad the current definition is and noted that some symptoms may be more appropriately categorized as “Neurologic” or other codes may be presenting symptoms for “Syncope, Stroke, or Ears, Nose, and Throat (ENT)”
 - Members recommended that symptoms and signs involving cognitive functions and awareness may be more appropriate in “Neurologic”
 - A member discussed that dizziness/giddiness can be in “Syncope, Stroke, or ENT” (more appropriately falling under “Syncope”)
- Behavioral Health:
 - Members identified dementia and delirium as potential codes to be moved to “Neurologic”
- Metabolic:
 - Members identified the scope to be mostly gastrointestinal and liver-related and recommended renaming it
 - Diabetes was identified as a large cohort of patients, and members recommended splitting it into its own visit type
 - Toxic encephalopathy was considered for moving to “Altered Mental State or Neurologic”

3. Refinements to Patient Cohorts of Interest

This session provided a feedback loop from the previous meeting, including detailed discussion of how to account for specific patient cohorts.

3.1 Accounting for Patient Heterogeneity

The majority of the session was spent discussing how to account for patient cohort heterogeneity. Sub-populations refer to patient cohorts as defined by their pre-existing conditions and characteristics or care trajectory. Workgroup members discussed:

- (i) Stratifying the patient population into mutually exclusive and exhaustive sub-groups to define more homogenous patient cohorts⁴
- (ii) Defining covariates in the risk adjustment model⁵
- (iii) Identifying measure exclusions⁶
- (iv) Monitoring certain sub-populations for further testing⁷

3.1.1 Patients with ED to ED Transfers

The workgroup reviewed analyses and discussed approaches for accounting for the higher risk-adjusted costs of ED transfer patients. The responsibility of both the “transferring from” and “transferring to” sub-populations were considered. Members discussed the influence of care that each ED had and whether they were attributable for the outcome of the patient. One member noted that in their experience in rural areas, there are certain ED admissions that will be consistently and quickly transferred. In these cases, the “transferring from ED” doesn’t have much control over the patient’s care, and thus, should likely not be attributable; however, the “transferring to ED” could be attributed. Some members noted cases where the ED can receive patients in which many clinical decisions had been made without their influence. In these cases, workgroup members noted it didn’t seem appropriate or clear which ED is attributable. Given the small number of episodes and ambiguity in attribution, members generally reached consensus to exclude this population.

3.1.2 Patients with Transfers from Post-Acute Care Settings

The workgroup reviewed descriptive statistics for observed and risk-adjusted costs for patients that were transferred from Inpatient Rehabilitation Facilities (IRF), Long-Term Care Hospitals (LTCH), and Skilled Nursing Facilities (SNF) to the ED. Results showed larger resource use, even after applying the base risk adjustment model (but no specific risk adjustors for prior post-acute care). Acumen noted that the higher resource use observed is likely the cost of the post-acute care (PAC) setting itself (i.e., once the patient had returned after the ED visit). The draft measure included all-cost, but it’s intended to be refined to exclude care unrelated to the treatment provided in the ED. One technique that may help to mitigate these results could be to not include the cost of the downstream PAC settings. Some members recommended to risk adjust or exclude all 3 of the patient cohorts. Some members suggested that LTCH and IRF present a wider range of patient complexities and that transfers from these settings should be excluded while SNF should be risk-adjusted. When discussing the possibility of risk adjusting

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

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

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

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

transfers from SNF, the workgroup recommended that the resource utilization group from the SNF bill be used to better characterize the different patient severities.

3.1.3 Patients with Subsequent Inpatient Admissions

The workgroup reviewed the descriptive statistics for episodes with subsequent inpatient admissions. The risk-adjusted cost was reviewed when including a categorical risk adjustor for the Medicare Severity-Diagnosis Related Group (MS-DRG) of the subsequent stay. Results indicated that the risk adjustment model successfully neutralized the costs of the subsequent admissions so that they're comparable to episodes without inpatient admissions. Members noted a concern that inappropriate admissions would be put into a higher risk strata, potentially benefiting the attributed provider. Acumen noted that a goal of MIPS is to balance cost with quality and that appropriateness of admissions is a quality aspect that could be paired with the cost measure. Members generally agreed about the importance of including episodes with inpatient admissions, given that they're a large part of the population and excluding these patients from the measure could result in unintended incentives to admit. Members were mostly in consensus to continue including episodes with inpatient admissions and risk adjust for them.

Some members noted that the downstream consequences of care for episodes with inpatient admissions would be mostly influenced by the hospital post-discharge, rather than the ED. The workgroup strategized ways that this cost could be mitigated once the responsibility of the patient's care shifts to the hospital. Ideas included adjusting the window of these episodes to end after the inpatient discharge, or in a similar manner, adjust the service assignment rules to be more exclusive after the inpatient discharge.

3.1.4 Patients with Observation Stays

The final patient cohort discussed was patients with observation stays. In the previous meeting, workgroup members reached consensus that observation stays that lead to inpatient admissions are similar enough to episodes with subsequent hospital admissions and that these cases could be handled in parallel. The discussion focused on ED visits with observation stays that lead to discharge. Members discussed the importance of where the observation stay occurred, whether it was in the ED or hospital, as it influenced the attributed clinician's influence over discharge planning. Members acknowledged that distinguishing the ED department from the hospital department may not be achievable with outpatient claims data. Members were interested in observing more data on this population, stratified by disposition status and after including covariates in risk adjustment, prior to and during field testing for further discussion.

Key Takeaways from Discussion and/or Polls for Addressing Sub-Populations for Meaningful Clinical Comparison:

- The general consensus amongst members during the meeting was to exclude ED-to-ED transfers
 - The post-meeting poll result were split between risk-adjusting and excluding
 - In alignment with the majority, ED-to-ED transfers will be excluded for field testing, and the workgroup can re-evaluate in the next webinar
- Transfers from PAC settings were considered for risk-adjustment or exclusion:
 - Some members identified IRF and LTCH for exclusions and SNF for risk adjustment
 - Other members felt the 3 settings should be handled with parallel decisions
 - There was generally support to exclude the subsequent PAC care for these patients as a mitigation technique
 - SNF reached consensus for risk adjustment
 - LTCH and IRF had a majority in favor of excluding, though consensus was not reached

- To allow for additional testing once risk adjustment and service assignment have been further developed, all three transfers from PAC settings (i.e. SNF, LTCH, IRF) will be risk-adjusted during field testing and the results will be discussed with the workgroup at the next webinar
- Members generally agreed to continue risk adjusting for ED visits ending in admission by including the MS-DRG of the stay as a risk adjustor
- Members requested more detailed data on episodes with observation stays, including stratification by disposition (i.e., admission, discharge) and results once additional risk adjustors were included in the risk adjustment model

4. Assigning Services to the Episode Group

Acumen described the purpose of service assignment so that members could continue discussing which services associated with the attributed clinician's role in managing the patient's care should be included in the cost measure. These assigned services should be inclusive enough to identify a measurable performance difference between clinicians but also not introduce excessive noise. Since ED is a setting encompassing many conditions, it requires a separate approach to service assignment that's separate from other procedural or condition-centric cost measures. This discussion focused on approaches that could reduce excessive noise and be feasibly implemented across the many clinical scenarios observed in the ED.

4.1 Defining an Approach to Service Assignment

Acumen defined the following 3 options to service assignment:

- **Option 1:** Assign all cost
- **Option 2:** Specify common rules to include and exclude services across all visit types
- **Option 3:** Specify specific rules to exclude services by visit types

Members reviewed reliability statistics between 2 draft forms of the measure, one which included all-cost and another that applied a draft set exclusions. Excluding excessive noise showed an increase in reliability.

Members agreed that an all-cost approach wasn't sufficient and efforts to exclude some costs would always be incrementally better. Members supported both options 2 and 3 from the list above. These 2 options can be used in conjunction. As a starting point for Option 2, members reviewed the list of services to exclude and include generally across all episodes that was collected in the previous meeting. Members agreed with the starting list and discussed excluding PAC services.

When discussing Option 3, members noted the importance of the timing of the services respective to the ED visit. Members reviewed the accompanying Candidate Services Over Time analysis and observed there were differing thresholds of days from the ED discharge where a large decrease in services being provided occurs. This varied for both service and ED Visit Type. Members recommended that this tool be used to define temporal exclusions that more strictly exclude services after this observed threshold. Acumen noted that a threshold slightly beyond the point in which the service is expected to have occurred can be beneficial, as it allows measurement of potentially excessive services or complications.

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

- Members recommended to apply general inclusion and exclusion across all episodes

- The majority of members supported developing specific exclusions by ED Visit, though consensus was not reached
 - Acumen will explore enhancing the exclusion rules with additional rules specific to ED Visits for field testing
- Members were generally satisfied with their starting draft list of general inclusions/exclusions from the previous meeting
- Members identified the importance of applying timing components to the exclusion rules that can vary on service and ED Visit Type

5. Next Steps

In the last session, Acumen provided a wrap-up of the discussion and an overview of the next steps. After the meeting, Acumen distributed the SAR Webinar Poll with a recording of the webinar to formally gather input from the meeting. The poll was open for one week and was structured to summarize discussion to reflect where there appeared to be verbal consensus; it included empirical testing results (where relevant) so that members could refer to this information when responding to the survey. The survey included comment boxes to provide additional thoughts. Based on National Quality Forum practices, the threshold for support was greater than 60% consensus among poll responses.

Acumen will operationalize input for the measure specifications based on SAR Webinar Poll results and will prepare specifications and related materials for the upcoming national field testing. The workgroup is slated to convene for a Post-Field Test Refinement (PFTR) Webinar in March 2022.

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.