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National Consensus Development and Strategic Planning for Health Care Quality Measurement

Fall 2025 Cycle Endorsement and Maintenance (E&M) Comment Summary Guide (Advisory Group Feedback)

COST AND EFFICIENCY

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Prepared by:
Battelle
505 King Avenue, Columbus, Ohio 43201

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Overview of Fall 2025 Measures for Review

During this measure review cycle, developers and stewards submitted two measures to the Cost and Efficiency committee for endorsement consideration (Table 1). Table 1 lists measures in the order the Advisory Group reviewed them.

Table 1. Overview of Measures Under Endorsement Review

CBE Number	Measure Title	New/Maintenance	Developer/Steward
2860	Thirty-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (IPF Readmission)	Maintenance	Mathematica/Centers for Medicare & Medicaid Services (CMS)
5275	Hospital-Level, Risk-Standardized 30-day All-Cause Readmission Following Hospitalization for Sepsis	New	Yale Center for Outcomes Research & Evaluation (CORE)/CMS

Advisory Group Feedback

The Advisory Group convened on December 4, 2025. Twenty of 32 (63%) active Advisory Group members attended to share feedback and ask questions regarding the measures under endorsement review. Developers/stewards of the respective measures also attended and provided responses to the Advisory Group questions. After the meeting, developers/stewards had the opportunity to submit additional written responses to Advisory Group member feedback and questions. The measure evaluation summaries of this comment summary guide contain overviews of the Advisory Group member discussions and developer/steward responses.

To support the review of the public comments and Advisory Group summaries, the number of comments received or number of individuals who shared similar comments, feedback, and/or questions is represented as “a few” (two to three individuals), “several” (four to six individuals), and “many” (more than six individuals).

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Measures Under Endorsement Review

CBE 2860: Thirty-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (IPF Readmission) [Mathematica/CMS]

Advisory Group Feedback

Feedback/Questions	Summary of Developer Response
All-Cause Readmission: Several committee members raised concerns about using an "all-cause" approach for this readmission measure. They expressed that this approach could penalize facilities for events unrelated to the quality of care (e.g., car accidents).	This measure is "all-cause" because an unplanned readmission for any cause is an adverse event from a patient's perspective. Additionally, including all unplanned readmissions, rather than focusing on a specific cause of readmission, allows IPFs more opportunity for quality improvement.±
Risk Adjustment: Several committee members requested more information about the risk adjustment methodology and the composition of the risk adjustment model.	The risk model includes risk factors for age, sex, and both psychiatric and non-psychiatric conditions that were found to be highly related to the readmission outcome. The risk adjustment model uses hierarchical logistic regression to estimate a risk-standardized readmission rate. To calculate the measure, the "predicted" number of readmissions over the "expected" number of readmissions for the IPF is multiplied by the overall national readmission rate.±
Differences in Psychiatric Sub-Populations: Several committee members expressed that dementia/Alzheimer's patients have different care models and discharge planning needs and suggested splitting the measure into two tracks: severe mental illness vs. dementia/Alzheimer's. Committee members requested additional stratified performance data and calibration plots for these two sub-populations, those with serious mental illness and those with dementia or Alzheimer's disease.	The measure includes individuals with dementia/Alzheimer's because the measure uses the 15 psychiatric clinical condition groups in the Clinical Classifications Software (CCS) groupings developed by the Agency for Healthcare Research and Quality (AHRQ). There are no plans to separate these two populations into their own measures at this time.± The risk adjustment model accounts for patients with dementia being more likely to have a higher readmission rate than other psychiatric disorders. The developer did not test model performance across these two groups of individuals, those with serious mental illness and those with dementia or Alzheimer's disease.±
Overlap with Hospital-Wide Readmission Measure: A few	Hospitals will not be penalized twice. The IPF Readmission measure

Feedback/Questions	Summary of Developer Response
committee members were concerned that facilities may be penalized twice: once under this IPF readmission measure and again under the hospital-wide readmission measure (CBE 2879e).	only attributes readmissions based on an index admission at an IPF.±
Medicare Advantage (MA) Exclusion: Many committee members said excluding MA is a major limitation, given growing MA enrollment. Members also expressed concerns that excluding MA could widen care gaps and opportunities for gaming.	This measure is claims based, and MA data differ from fee-for-service (FFS) data. Currently, the IPF Readmission measure does not include MA patients, but the developer could consider adding this population in the future.±
Reliability and Low-Volume Facilities: One committee member commented that low case thresholds (i.e., patient volume) lead to poor reliability and shrinkage toward mean. They urged CMS to raise thresholds for better accuracy.	Facilities receive exhaustive patient-level data for drill-down analysis. The developer will note reliability concerns for CMS's consideration, as the responsibility for setting volume thresholds for reporting falls under CMS's purview.
Actionability for Facilities: One committee member commented on the need for actionable data to make improvements. They asked if facilities are given a list of patients who are flagged as readmitted so they can see why a patient was readmitted. They further asked if the facilities receive their actual count and their expected count.	IPFs are provided with access to an IPF-specific reporting dashboard system provided by CMS, which allows IPFs to drill down to the individual patient level to determine why patients were readmitted. IPFs do receive their actual count versus expected count of readmissions, which is calculated as the risk-standardized ratio.±
Broaden Measure Scope: A few committee members discussed whether this measure should evolve toward mutual accountability and whole-person care models, given the complexity of patients with high comorbidities and accident rates. Committee members suggested considering whether older measures should be retired in favor of cross-cutting metrics that address overall utilization and integrated care.	Although this measure has been in use for several years, many IPFs have risk-standardized readmission ratios below or worse than the national rate of 19.4%, suggesting there is room for improvement. There are no plans to update this measure to a cross-cutting measure at this time. ±
Setting Exclusions: One committee member asked why the measure is limited to the IPF setting and excludes individuals who are seen in other settings such as an emergency room or Designated Receiving Facility (DRF). The same committee member asked if the developer considered expanding to other settings.	There are no plans to expand the population for this measure; however, CMS is adding the claims-based 30-Day Risk-Standardized All-Cause Emergency Department Visit Following an IPF Discharge (CBE #4190) measure to the IPF Quality Reporting (IPFQR) program beginning in 2027. The IPF ED Visit measure assesses the proportion of adult patients with an ED visit for any cause, including observation stays, within 30 days of discharge from an IPF without a subsequent admission.±

±The developer's full written response can be found in Appendix A.

CBE 5275: Hospital-Level, Risk-Standardized 30-day All-Cause Readmission Following Hospitalization for Sepsis [Yale CORE/CMS]

Advisory Group Feedback

Feedback/Questions	Summary of Developer Response
Coding Accuracy and Artificial Intelligence (AI) Influence: Several committee members raised concerns about the impact of coding accuracy, artificial intelligence (AI)-assisted coding, and clinical variability on sepsis diagnoses. They noted that AI and inconsistent clinical practices may inflate sepsis diagnosis rates, which could affect the validity of the measure and bias readmission rates. The committee questioned whether the measure's risk adjustment model remains appropriate as diagnostic thresholds and coding practices evolve. Members also expressed concern over the lack of specificity in sepsis definitions and severity levels, suggesting the need for clearer criteria and a focus on severe sepsis to improve usability. They emphasized the importance of understanding how changes in diagnostic practices, as well as clinical and coding variability, influence which patients are included in the measure's numerator and denominator. Members recommended the measure account for these trends to ensure accurate and reliable assessments.	The developer analyzed coding variation using 2022-2023 data. The analysis showed no variation in the use of code A41.9 across hospitals based on sepsis volume. The developer did not find any association found between coding intensity and unadjusted sepsis readmission or mortality rates within volume quartiles. This suggests that coding variation does not impact the comparability of risk-adjusted outcomes across hospitals. However, the developer will continue to monitor coding practices annually and adjust as needed.± The sepsis readmission measure identifies cases using diagnosis codes from claims data, and a comprehensive list of these codes is available in the data dictionary. CMS provides clear guidelines on how to code and sequence sepsis, severe sepsis, and septic shock, using the Sepsis-2 definition.± A robust risk adjustment model addresses case-mix differences between hospitals. The model includes 160 variables, such as organism pathogenicity, immune suppression, organ compromise (e.g., hemodynamic disturbance, acidosis, fluid overload), and sepsis severity. The source of sepsis (e.g., gastrointestinal, urinary, endocarditis) is also included when relevant.± For a full list of risk variables included in the measure, please refer to Table 11 in the Figures and Tables attachment. The risk model was also refined with input from a technical expert panel, ensuring comprehensive adjustment for relevant clinical factors.± The measure relies on final-action claims, which reflect final payments following audits and denials for improper coding. If coding practices change in the future, the risk model accommodates such changes, as testing has shown reliable performance across different sepsis subpopulations. If CMS monitoring identifies significant shifts in coding, the developer will update measure specifications as part of ongoing maintenance.±

Feedback/Questions	Summary of Developer Response
	As part of its annual measure monitoring, CMS assesses metrics such as cohort size, distribution of risk variables, model performance, cohort volume, unadjusted outcomes, and measure scores. This process ensures that important coding changes or other impacts are identified and addressed. Measure specifications are continually reviewed by the developer and steward and updated based on changes in coding, clinical practice, and stakeholder feedback.
Exclusions: A few committee members asked about the exclusion of younger Medicare patients and dual-eligible individuals, given sepsis affects all ages. Additionally, a few committee members asked about why the measure excluded pneumonia-related sepsis cases.	In alignment with all other CMS hospital readmission measures, this sepsis readmission measure does not include Medicare beneficiaries under age 65 because they are a distinct population with higher risk that can complicate risk adjustment. The measure does not exclude patients who are dually eligible. ± This measure excludes admissions for sepsis that are already captured within CMS's pneumonia readmission measure to avoid double-penalizing hospitals for the same readmission within the Hospital Readmission Reduction Program. The intent was not to exclude specific sources of infection. From a clinical perspective, however, it is more appropriate for pneumonia admissions to remain in the pneumonia readmission measure as it reflects the clinical focus and teams treating the condition.±
Measure Necessity and Related Measures: Several committee members questioned the need for a sepsis-specific readmission measure given existing sepsis measures and the Hybrid Hospital-Wide Readmission (HWR) measure (CBE #2879e). They asked what distinct care gap this measure addresses. They also asked for clarification if sepsis patients are counted twice under this measure and CBE 2879e. They also asked if the developer theorized if better performance on the Severe Sepsis and Septic Shock measure (CBE #0500) correlates with this measure. One committee members asked if this measure would distract hospitals because the focus should be on accurate diagnosis (identifying the primary source), not on readmission.	The sepsis readmission measure can improve quality and lower costs by addressing the high volume and high cost of sepsis readmissions, which currently results in $26.3 in aggregate for hospital costs for patients with sepsis aged 65 and older. In addition, such a measure can improve variation in hospital-level readmission rates following discharge from a sepsis diagnosis (which, after adjusting for case mix, the risk-standardized hospital-level readmission rates range from 13% to 25%). No federal program has a sepsis-specific outcome measure.± If implemented, the measure will help bring a focus to readmissions related to sepsis. Along with their measure score, hospitals will receive their unadjusted readmission counts and rates, as well as detailed information about each readmission. Together, this could bring focused investment in hospital environments.± This measure does not take away from the importance of identifying the primary source of infection. While this sepsis readmission measure aims to address the quality gap in post-discharge care coordination,

Feedback/Questions	Summary of Developer Response
	in-hospital care is also in the improvement pathway and identifying the primary source of infection and appropriately treating it should also reduce readmission rates.± Yes, sepsis admissions are in the medical cohort of the HWR measure. While sepsis admissions appear in both the sepsis readmission measure and in the HWR measure, different CMS programs use the measures. The Hospital Readmission Reduction Program (HRRP) does not use the HWR measure; HRRP is limited to condition- and procedure-specific measures. Therefore, CMS has developed and is considering proposing this sepsis readmission measure specifically for inclusion in HRRP.± The developer did consider the relationship between CBE #0500 and the sepsis readmission measure. Although this measure aims to address the quality gap in post-discharge care coordination, in-hospital care is also in the improvement pathway. The developer added that CBE #0500, which focuses on in-hospital care processes, and the sepsis readmission measure, which is an outcome of post-discharge care, represent different care teams. Additionally, the relationship between CBE #0500 and readmission is complex.±
Measure Actionability: A few committee members asked about available evidence that provider/hospital-based interventions can improve outcomes. One committee member noted that recent research suggests sepsis-specific interventions may not reduce readmissions. They questioned whether the measure promotes actionable improvements.	There is evidence for the effectiveness of interventions to reduce sepsis readmission rates, including structured transition programs with effective discharge planning, and early and structured post-discharge follow up. The literature is mixed, and differences in study design, the definition of outcomes, variables used for adjustment, and differences in inclusion criteria limit the generalizability of clinical trials.±
Risk Adjustment for Social Determinants: A few committee members asked if the risk adjustment model includes socioeconomic factors, such as income and housing, to avoid penalizing hospitals serving vulnerable populations.	The developer considered dual eligibility status during measure development, but the risk adjustment testing results did not support adjusting for the dual eligible variable. Existing clinical variables in the measure account for most of the risk associated with readmission for dual eligibility. The risk model was well calibrated for both dual-eligible and non-dual-eligible readmissions. Adding dual eligibility to the risk model resulted in little impact on measure scores. If implemented, the sepsis readmissions measure will be in the HRRP, which accounts for dual eligibility within the payment adjustment methodology.±
Unintended Consequences (Emergency Department [ED]/Observation Shifts): One committee member expressed that	The developer acknowledged this concern and will share it with CMS. Additionally, CMS may consider balancing measures, such as Excess

Feedback/Questions	Summary of Developer Response
hospitals might shift readmissions to ED or observation stays to avoid penalties, as seen in prior CMS programs.	Days in Acute Care. As part of annual measure monitoring, CMS looks for unintended consequences, such as shifts in coding or care settings, and association between coding intensity and outcomes. In addition, current testing analyses found that while readmission outcomes differ by the severity of the diagnosis at the patient level, there were no differences in hospital-level post-discharge mortality. This suggests that current practice is not resulting in unintended consequences.
Differences in Outcomes by Location: One committee member asked if the developer saw a difference in how location (e.g., rural vs. urban) affects outcomes.	The developer did not examine how location affects outcomes. CMS does not adjust the readmission measures in the HRRP for geographic location, but payment adjustments are made as a percentage of Diagnosis-Related Group payments, which are adjusted for geography.±

±The developer's full written response can be found in Appendix A.

Appendix A: Full Developer Responses

CBE 2860: Thirty-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (IPF Readmission) [Mathematica/CMS]

Advisory Group Feedback/Question	Full Response
All-Cause Readmission: Several committee members raised concerns about using an "all-cause" approach for this readmission measure. They worried this approach could penalize facilities for events unrelated to the quality of care (e.g., car accidents).	Any readmission is undesirable for patients, regardless of cause. Additionally, complex interplays between psychiatric and acute illness and care may complicate diagnoses and the underlying causes of a readmission—a serious mental illness diagnosis that was not appropriately addressed may have contributed to an incident requiring an acute care hospitalization. Thus, readmissions from various, related causes are best captured in an all-cause measure. Finally, a focus on all-cause readmissions offers IPFs an opportunity to implement a broader range of quality improvement initiatives with promise for greater impact than a measure focusing on a specific cause of readmission. Aligning with CMS's Hospital-Wide All-Cause Unplanned Readmission Measure (HWR) (CBE ID 1789), the measure is designed to capture unplanned readmissions that arise from acute clinical events requiring urgent rehospitalization within 30 days of discharge. Only an unplanned inpatient admission to an IPF or short-term acute care hospital can qualify as a readmission. Planned readmissions, which are generally not a signal of quality of care, are not considered readmissions in the measure outcome. The IPF Readmission measure uses an algorithm to identify planned readmissions, particularly: (1) procedures and diagnoses that are always considered planned (such as transplant, chemotherapy/radiotherapy, and rehabilitation), and (2) procedures that are considered potentially planned (such as colorectal resection or aortic resection).
Risk Adjustment: Several committee members asked for more detail on the measure's risk adjustment. They requested details on what the risk adjustment model includes, such as whether it accounts for mental health and non-mental health factors, and sought more information about the specific risk adjustment methods used.	The risk model contains risk factors for age, sex, and both psychiatric and non-psychiatric conditions that were found to be highly related to the readmission outcome. There are 22 non-psychiatric clinical comorbidities in the risk model, such as heart failure, liver disease, and diabetes, which can be found on pages 5-6 of the Risk Adjustment Attachment (CBE2860-Risk-Adjustment-Attachment.pdf). The risk adjustment model does not include accidents. The risk adjustment model uses a hierarchical logistic regression to estimate a risk-standardized readmission rate (RSRR). The RSRR is calculated by multiplying the standardized readmission rate (SRR) with the overall national

Advisory Group Feedback/Question	Full Response
	readmission rate for better interpretation. The SRR, which is the "predicted" number of readmissions over the "expected" number of readmissions, is calculated for each IPF. The "predicted" number of readmissions is the number of readmissions, given the IPF's performance and its observed case mix, which is calculated by summing the estimated probabilities of readmission for the index admissions contributing to the IPF, based on the IPF-specific intercept and all other risk factors. The "expected" number of readmissions is the number of readmissions given the national performance and its observed case mix, which is calculated by summing the estimated probabilities of readmission for the index admissions contributing to the IPF, based on the average intercept and all other risk factors. An SRR greater than 1 indicates worse quality of care compared to the national average. An SRR less than 1 indicates better quality of care. Using the clinical risk variables that were selected for the model based on the bootstrap method, the IPF Readmission measure uses hierarchical logistic regression to model the log-odds of readmission. This two-level specification allows reliable estimates for small-volume hospitals while accepting a certain shrinkage towards the mean. The estimate of hospital-specific intercept reflects the quality of care received at an IPF after adjusting for case mix. A history of accidents is not included in the risk adjustment model.
Overlap with Hospital-Wide Readmission Measure: A few committee members were concerned that facilities may be penalized twice: once under this IPF readmission measure and again under the hospital-wide readmission measure (CBE 2879e).	No, hospitals will not be penalized twice. The IPF Readmission measure attributes readmissions to an index admission at an IPF. The hospital readmission measure in CMS's Inpatient Quality Reporting Program is separate and distinct from the IPF Readmission measure. A case in which a patient transferred from an acute-care hospital to an IPF and then discharged from the IPF would be a denominator case in the IPF Readmission measure only.
Differences in Psychiatric Sub-Populations: Several committee members expressed that dementia/Alzheimer's patients have different care models and discharge planning needs and suggested splitting the measure into two tracks: severe mental illness vs. dementia/Alzheimer's. Committee members requested additional stratified performance data and calibration plots for these two sub-populations, those with serious mental illness and those with dementia or Alzheimer's disease.	Dementia/Alzheimer's are included in this measure because this measure uses the 15 psychiatric clinical condition groups in the Clinical Classifications Software (CCS) groupings developed by the Agency for Healthcare Research and Quality (AHRQ). The AHRQ software is used because it was developed on the Nationwide Inpatient Sample within the Healthcare Cost and Utilization Project and is widely used in health service research, epidemiology, and quality measurement. As a result, IPFs are able to use the IPF Readmission measure to drive quality improvement across a broader spectrum of patient cases than if the measure focused on one category of diagnoses or another. The measure does not stratify by the serious mental illness (SMI) and Dementia/Alzheimer's populations. There are no plans to separate these two populations into their own measures at this time.

Advisory Group Feedback/Question	Full Response
	The risk adjustment model accounts for patients with dementia being more likely to have a higher readmission rate than other psychiatric disorders. Controlling for all other risk factors, when calculating the predicted probabilities for each patient, those with principal discharge diagnosis of dementia get assigned a higher probability of readmission. We did not test model performance across these two groups of individuals, those with SMI and those with dementia or Alzheimer's disease. As noted above, when controlling for all other risk factors, those with a principal discharge diagnosis of dementia get assigned a higher probability of readmission than other categories.
Medicare Advantage (MA) Exclusion: Many committee members said excluding MA is a major limitation, given growing MA enrollment. Members also expressed concerns that excluding MA could create inequities and opportunities for gaming.	MA patients are not currently included in the IPF Readmission measure, but this population could be considered for inclusion in the future. The number of Medicare FFS beneficiaries who also are enrolled in a MA plan has increased over the years. Because this is a claims-based measure, additional testing would be needed to include MA patients.
Actionability for Facilities: One committee member commented on the need for actionable data to make improvements. The committee member asked if facilities are given a list of patients who are flagged as readmitted so they can see why a patient was readmitted. They further asked if the facilities receive their actual count and their expected count.	Yes, CMS provides the IPFs with access to an IPF-Specific Reporting dashboard system, which allows them to drill down to the individual patient level to determine why patients were readmitted. For instance, IPFs can review drill-downs into readmission rates by the principal index stay discharge diagnosis categories, readmissions by location (i.e., to the same facility or a different facility), beneficiaries with multiple readmissions, and top 10 principal diagnosis categories for readmissions. The facilities are also able to download a CSV file with all their patient discharges within the dashboard for further analysis. IPFs receive their actual count vs. their expected count calculated as their standardized risk ratio (SRR). They also receive their performance compared to the national and state performance and their risk-standardized readmission rate (RSRR).
Broaden Measure Scope: A few committee members discussed whether this measure should evolve toward mutual accountability and whole-person care models, given the complexity of patients with high comorbidities and accident rates. Committee members suggested considering whether older measures should be retired in favor of cross-cutting metrics that address overall utilization and integrated care.	Although this measure has been in the program for several years, many IPFs still have RSRRs below, or worse than, the national rate of 19.4%, suggesting that there is room for improvement. There are no plans to update this measure to a cross-cutting measure at this time.
Setting Exclusions: One committee member asked why	There are no plans to expand the population for this measure; however, CMS is

Advisory Group Feedback/Question	Full Response
the measure is limited to the IPF setting and excludes individuals who are seen in other settings such as an emergency room or Designated Receiving Facility (DRF). The same committee member asked if the developer considered expanding to other settings.	adding the claims-based 30-Day Risk-Standardized All-Cause Emergency Department Visit Following an IPF Discharge (IPF ED Visit) measure to the Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program beginning in 2027. The IPF ED Visit measure assesses the proportion of adult patients with an ED visit for any cause, including observation stays, within 30 days of discharge from an IPF without a subsequent admission. The IPF Readmission and IPF ED Visit measures will complement each other, providing a clear picture to IPFs of patients discharged from their facility who were readmitting or see at an ED within 30 days, and there will be no double-counting between these two measures.

CBE 5275: Hospital-Level, Risk-Standardized 30-day All-Cause Readmission Following Hospitalization for Sepsis [Yale CORE/CMS]

Advisory Group Feedback/Question	Full Response
Measure Necessity and Related Measures: Several committee members questioned the need for a sepsis-specific readmission measure given existing sepsis measures and the Hybrid Hospital-Wide Readmission (HWR) measure (CBE #2879e). They asked what distinct care gap this measure addresses. In addition, they asked for clarification if sepsis patients are counted twice under this measure and CBE 2879e. They also asked if the developer theorized if better performance on the Severe Sepsis and Septic Shock measure (SEP-1; CBE #0500) correlates with this measure. One committee members asked if this measure would distract hospitals because the focus should be on accurate diagnosis (identifying the primary source), not on readmission.	This sepsis readmission measure addresses both a quality gap and a measurement gap. High volume, high cost ($26.3 billion in aggregate hospital cost for patients with sepsis aged 65 and older), and variation in hospital-level readmission rates following discharge from a sepsis diagnosis underscore the need for a sepsis readmission measure to improve quality and lower costs. Sepsis is the most frequent reason for admission to the hospital (in 2021 there were more than 2 million admissions, and readmissions can be as high as 26%), and yet **there are no sepsis-specific outcome measures currently in any federal program** (SEP-1 is a process measure), and this measure captures a large group of patients not currently assessed by any of the condition-specific readmission measures. Risk-standardized hospital-level sepsis readmission rates (after adjusting for case mix) range from 13% to 25%, underscoring the quality gap. Sepsis admissions are in the medical cohort of the Hospital-Wide Readmission (HWR) measure (CBE #2879e). While sepsis admissions appear in both the sepsis readmission measure and in the HWR measure, the measures are used in different CMS programs. The HWR measure is not within the Hospital Readmission Reduction Program (HRRP); HRRP is limited to condition and procedure-specific measures. Therefore, CMS has developed and is considering proposing this sepsis readmission measure specifically for inclusion in HRRP. Specifically, in terms of post-discharge care, the care gap is where patients are discharged without clear instructions for antibiotics completion or follow up with

Advisory Group Feedback/Question	Full Response
	primary care in a timely manner, or medication reconciliation. A number of organs may be involved during the sepsis episode, and appropriate attention to adjustment of medications and necessary referrals to specialists for source control, antibiotic side effects or medication interactions, dietary changes, and education about early signs and symptoms of recurrence or complications (e.g., diarrhea for C. difficile, shortness of breath for under diuresis) are necessary to avoid readmissions specifically for patients who experience an index hospitalization for sepsis. We did consider the relationship between SEP-1 and the sepsis readmission measure. Although this measure aims to address the quality gap in post-discharge care coordination, in-hospital care is also in the improvement pathway. We note, however, that SEP-1 (that focuses on in-hospital care, and is a process measure), and the sepsis readmission measure (that focuses on post-discharge care and is an outcome measure) represent different care teams, and that the relationship between SEP-1 and readmission, is complex. If implemented, the measure will help bring a focus to readmissions related to sepsis. Along with their measure score, hospitals will receive their unadjusted readmission counts and rates, as well as detailed information about each readmission. Together, this could bring focused investment in hospital environments to improve, including improvements in in-hospital care to identify the source of the infection, sources control (debridement or drainage of infectious collections), infection control policies, antibiotic stewardship, specific instruction regarding duration of antimicrobial care post-discharge and necessary access provision to receive intravenous antibiotics where indicated, and post-discharge follow up with infectious disease and subspecialties as needed for ongoing source control and/or complications that arose from index sepsis hospitalization. In addition, and unique to this sepsis readmission measure, improvement in post-discharge care leading to completion of antibiotic regimens could mitigate the incidence of antibiotic-resistant organisms in the community. This measure does not take away from the importance of identifying the primary source of infection; source control is one of the most important parts of treating sepsis and reducing readmissions. While this sepsis readmission measure aims to address the quality gap in post-discharge care coordination, in-hospital care is also in the improvement pathway and identifying the primary source of infection and appropriately treating it should also reduce readmission rates. The quality of antibiotic stewardship during the index hospitalization is important to mitigate occurrence of infections with resistant organisms, and hospital-level infection

Advisory Group Feedback/Question	Full Response
	control practices are crucial to prevent new infections (with organisms such as *C. difficile*), which tend to occur in these settings.
Measure Actionability: A few committee members asked about what evidence is available that provider/hospital-based interventions can improve outcomes? One committee member noted that a recent JAMA article suggests sepsis-specific interventions may not reduce readmissions. They questioned whether the measure promotes actionable improvements.	There is evidence for the effectiveness of interventions to reduce sepsis readmission rates. For example, post-discharge strategies, including timely home health visits and outpatient physician follow-up within the first week, have been shown to reduce 30-day readmissions in one study.[1] Another study at a tertiary hospital showed that the use of multimodal interventions, such as clinical decision support tools, sepsis response teams, standardized order sets, and data-driven quality tracking, have been associated with lower readmission rates.[2] A randomized clinical trial at a multisite facility showed that comprehensive post-sepsis care bundle, addressing medication management, functional recovery, comorbidities, and mental health, led to an 88% reduction in 90-day readmission risk.[3] Regarding the study in JAMA,[4] it is a step wedged cluster randomized trial of seven hospitals within the same health system, that included ~3,500 patients and examined a composite outcome of 90 days readmission OR mortality. This study was spurred on by the successful implementation of a multicomponent post-sepsis care bundle. The authors sought to scale-up their effective intervention as demonstrated in the study referenced above (Taylor et al., 2022). In the scale-up study, they were able to enroll 18% of participants screened, uptake of intervention was relatively low (66%), and the lower post-discharge mortality was statistically significant, but the slightly higher readmission rate was not statistically significant. In their estimation of readmission rate, they included patients who are ineligible for readmission (patients who died in the hospital and those discharged to hospice). Under these circumstances, it is problematic to infer that the intervention was not effective. 1. Deb P, Murtaugh CM, Bowles KH, et al. Does Early Follow-Up Improve the Outcomes of Sepsis Survivors Discharged to Home Health Care? Medical Care. 2019;57(8):633-640. doi:10.1097/mlr.0000000000001152 2. Alnababteh MH, Huang SS, Ryan A, McGowan KM, Yohannes S. A Multimodal Sepsis Quality-Improvement Initiative Including 24/7 Screening and a Dedicated Sepsis Response Team-Reduced Readmissions and Mortality. Crit Care Explor. 2020 Nov 24;2(12):e0251. doi: 10.1097/CCE.0000000000000251 3. Taylor SP, Murphy S, Rios A, et al. Effect of a Multicomponent Sepsis

Advisory Group Feedback/Question	Full Response
	Transition and Recovery Program on Mortality and Readmissions After Sepsis: The Improving Morbidity During Post-Acute Care Transitions for Sepsis Randomized Clinical Trial*. Critical Care Medicine 4. Taylor SP, Eaton T, Rios A, et al. Proactive Telehealth-Based Sepsis Transition and Recovery Support, Hospital Readmission, and Mortality: A Randomized Clinical Trial. JAMA Intern Med. 2025;185(10):1238–1246. doi:10.1001/jamainternmed.2025.3699
Coding Accuracy and Artificial Intelligence (AI) Influence: Several committee members raised concerns about the impact of coding accuracy, artificial intelligence (AI)-assisted coding, and clinical variability on sepsis diagnoses. They noted that AI and inconsistent clinical practices may inflate sepsis diagnosis rates, which could affect the validity of the measure and bias readmission rates. The committee questioned whether the measure's risk adjustment model remains appropriate as diagnostic thresholds and coding practices evolve. Members also expressed concern over the lack of specificity in sepsis definitions and severity levels, suggesting the need for clearer criteria and a focus on severe sepsis to improve usability. They emphasized the importance of understanding how changes in diagnostic practices, as well as clinical and coding variability, influence which patients are included in the measure's numerator and denominator. Members recommended the measure account for these trends to ensure accurate and reliable assessments.	During measure development, we examined coding variation for sepsis diagnosis. The interquartile range of frequency of A41.9 codes used by hospitals ranged from 55% to 75% , but the median % of A41.9 use did not differ by sepsis volume of hospitals. Importantly, **we did not find any association between unadjusted 30-day-sepsis readmission rates and intensity of sepsis coding** (Figure D2) within volume strata, nor did we see an association with unadjusted sepsis mortality rates (stratified by hospital volume) (Figure D3). These results suggest that hospital performance on the measure is likely not biased and will not impact the comparability of outcomes across hospitals. In addition, the sepsis readmission measure is based on final-action claims, which are adjusted for denials for over coding or lack of documentation to support the diagnosis. The cohort for the sepsis readmission measures is identified by diagnosis codes in claims (see data dictionary in the attachments for the full measure submission). CMS is clear on how sepsis, severe sepsis, and septic shock should be coded and sequenced. For additional information on CMS sepsis coding guidelines, please refer to the ICD-10-CM Official Guidelines for Coding and Reporting for sepsis on page 22. For coding of sepsis, CMS currently uses the Sepsis-2 definition. Sepsis-2 defines sepsis as the condition affecting patients with suspected or documented infection AND greater than or equal to two Systemic Inflammatory Response Syndrome (SIRS) criteria. SIRS is defined by the satisfaction of any two of the criteria below: • Temperature >38°C or <36°C • Heart rate >90/min • Respiratory rate >20/min or Paco2 <32 mm Hg. • White blood cell count >12 000/mm3 or <4000/mm3 or >10% immature bands

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	CMS also uses the Sepsis-2 definition for the Severe Sepsis and Septic Shock: Management Bundle (SEP-1) bundle measure and it is the definition being used in the development of the sepsis readmission measure cohort. The risk model addresses case-mix differences between hospitals. Please see Table 11 in the Figures and Tables attachment for the full list of risk variables included in the measure. The risk model was developed empirically, based on the associated risk between claims-based variables and the outcome of readmission. The risk model also included clinical input from our technical expert panel (TEP), resulting in addition of pathogenicity of the organism, and immune-suppressed state of the patient, indicators of organ compromise such as hemodynamic disturbance, acidosis, fluid overload (indicating cardiac dysfunction), as well as an indicator for severity of sepsis. In many cases the source of sepsis was also included in risk adjustment based on empiric criteria (i.e., urosepsis, endocarditis). Rather than stratify performance by type of sepsis, we chose to risk adjust. We found that the risk model for the sepsis readmission measure was well calibrated for each specific subgroup of sepsis admission (severe sepsis vs. non-severe sepsis and septic shock vs. non-septic shock). Please see Figure 1 and Figure 2 below, for these results. As a claims-based measure, the cohort and outcome are based on final action claims which are used for hospital billing and reimbursement by CMS. Hospitals must code accurately and are subject to CMS audits. Changes in diagnosis of sepsis over time will be mitigated by the risk adjustment model, which includes variables for the severity of sepsis. We also know that the risk model performs well for patients with differing sepsis severity (see Figure 1 and Figure 2). Risk decile plots show that the observed and predicted readmission rates are aligned, indicating that the risk model is well calibrated across different levels of readmission risk based on diagnosis). In addition, as part of an annual process, CMS assesses measure metrics, such as cohort size, distribution of risk variables, model performance, distribution of cohort volume, unadjusted outcomes, and distribution of measure scores, which would capture any important changes that would need to be addressed in the measure as part of ongoing measure maintenance. As part of annual measure monitoring, CMS assesses measure metrics, such as cohort size, distribution of risk variables, model performance, distribution of cohort volume, unadjusted outcomes, and distribution of measure scores. This process has been shown in the past (for other measures) to identify changes in coding

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	practices, changes in outcomes, and potential impacts on measure scores. As part of the measure lifecycle, measures are continually monitored and measure specifications are updated in response to changes in coding, clinical practice, and in response to stakeholder feedback. We note that currently, we do not see an association between coding intensity and readmission rates, nor do we see an association between coding intensity and mortality rates.
Exclusions: A few committee members asked about the exclusion of younger Medicare patients and dual-eligible individuals, given sepsis affects all ages. Additionally, a few committee members asked about why the measure excluded pneumonia-related sepsis cases. Members worried about consistency and potential gaps in attribution.	In alignment with all other CMS hospital readmission measures, this sepsis readmission measure does not include Medicare beneficiaries under age 65 because they are a distinct population with higher risk that can complicate risk adjustment. The measure does not exclude patients who are dually eligible. From a clinical perspective, the admissions with sepsis within the pneumonia measure (those with a principal discharge diagnosis of sepsis AND a secondary diagnosis of pneumonia that is present on admission [POA] but NO secondary diagnosis of severe sepsis) are more appropriate for consideration in the pneumonia readmission measure. Physicians treat organ systems and when pneumonia is on the diagnosis list, the infection source is already identified and they will focus on treating pneumonia, with support from pulmonology and respiratory therapy, rather than a more diffuse condition such as sepsis. From a payment adjustment perspective, CMS does not want to double-count admissions across measures so as to avoid penalizing hospitals for the same readmission more than once.
Risk Adjustment for Social Determinants: A few committee members asked if the risk adjustment model includes socioeconomic factors, such as income and housing, to avoid penalizing hospitals serving vulnerable populations.	First, we note that if the measure is implemented, it with be in the Hospital Readmission Reduction Program (HRRP), which accounts for dual eligibility within the payment adjustment methodology. The HRRP adjusts payments to hospitals based on their performance within peer-groups of the hospital-proportion of patients with dual eligibility. We did, however, consider risk adjustment for sociodemographic risk factors and found that for the dual eligible (DE) variable, most of the associated risk of readmission was accounted for by clinical variables. We also found there was little impact on measure scores when we included the variable in the risk model, and that the model (without DE adjustment) performed well, separately for both DE and non-DE patients, as described below. We tested the dual eligibility variable and found that while patients with the DE variable have a higher risk unadjusted risk of readmission following an index hospitalization for sepsis, there is little impact of adjusting for the DE variable at the hospital level, on measure scores. Measure scores calculated with and

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	without the DE variable are highly correlated, and the distribution of measure scores across quartiles of the hospital proportion of patients with DE status overlaps. This shows that hospitals that serve a relatively larger proportion of DE patients can perform as well as hospitals that serve relatively fewer DE patients. Our model testing results (calibration plots) show that without adjustment for DE, there is good alignment between observed and predicted values for DE admissions, and non-DE admissions (separately) (see Figure 2 in the Figures and Attachments document).
Unintended Consequences (Emergency Department [ED]/Observation Shifts): One committee member expressed that hospitals might shift readmissions to ED or observation stays to avoid penalties, as seen in prior CMS programs.	The measure as specified includes any unplanned inpatient admission to any acute care hospital for any cause within 30 days of the date of discharge of an eligible index hospitalization for sepsis. It does not include emergency department (ED) visits or observation stays as specified in the Excess Days in Acute Care (EDAC) measures. This is a deliberate focus on the most severe and costly of the post-discharge hospital-based acute care events. In addition, the measure is currently being proposed for adoption in the Hospital Readmission Reduction Program (HRRP). To align with other measures currently in HRRP, this measure only focuses on inpatient readmissions. However, if this measure is implemented, through measure reevaluation, CMS will monitor the impact of the measure for unintended consequences, such as changes in care settings. We will also bring this committee's feedback to CMS regarding the possibility of a balancing EDAC measure for sepsis. If implemented, CMS will monitor this measure for unintended consequences, such as changes in coding, unanticipated changes in the outcome rate, and relationships between coding and outcomes. As part of annual measure monitoring, CMS assesses measure metrics, such as cohort size, distribution of risk variables, model performance, distribution of cohort volume, and distribution of measure scores. This process would identify changes in coding practices and potential impacts on measure scores. CMS will monitor this measure for unintended consequences, such as shifts in coding, and association between coding intensity and outcomes. We note, however, that while we do see differences in unadjusted outcome rate by diagnosis code, as expected, we do not see an association between the day or week of discharge and post-discharge mortality, or an association between post-discharge mortality and hospital volume. Therefore, while readmission outcomes differ by the severity of the diagnosis at the patient level, we do not see hospital-level differences in post-discharge mortality. This suggests that current practice is

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	not resulting in unintended consequences. As noted above, if the sepsis readmission measure is implemented, CMS will monitor this measure for unintended consequences, such as impacts on post-discharge mortality.
Is dementia included in the multiple chronic conditions (MCC) Frailty Index for risk adjustment?	No, dementia is not included in the MCC Frailty Index. Please see the data dictionary for more information about the variables in the MCC Frailty Index.
Differences in Outcomes by Location: One committee member asked if the developer saw a difference in how location (e.g., rural vs. urban) affects outcomes.	We did not examine how location affects outcomes. CMS does not adjust the readmission measures in the Hospital Readmission Reduction Program (HRRP) for geographic location, but payment adjustments are made as a percentage of DRG payments, which are adjusted for geography. In our analyses, however, we did not see a relationship between hospital-level sepsis coding intensity by hospital volume, nor did we see an association between unadjusted 30-day sepsis readmission rates and sepsis coding intensity across quartiles of hospital volume.

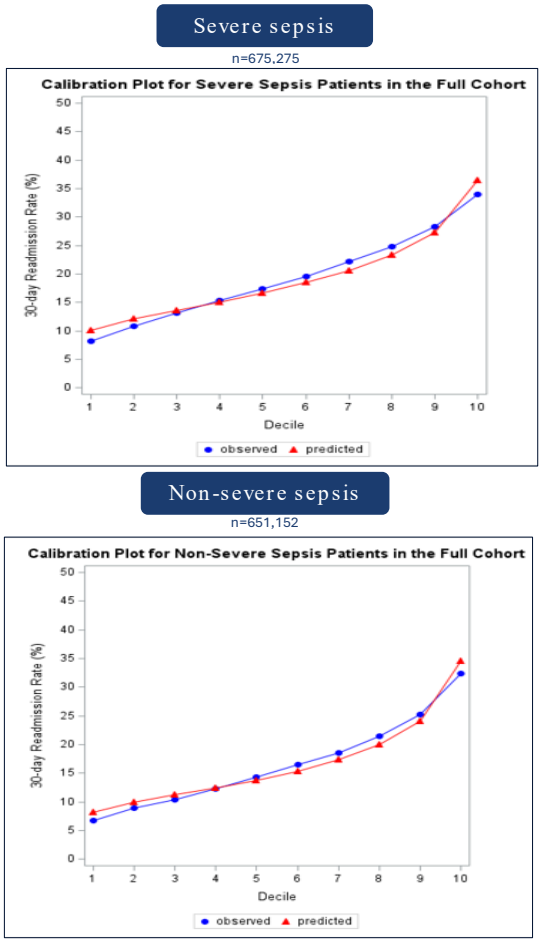

Figure 1. Calibration Plot for Patients with and without Severe Sepsis in Sepsis Readmission Validation Cohort (January 1, 2022-December 31, 2023)

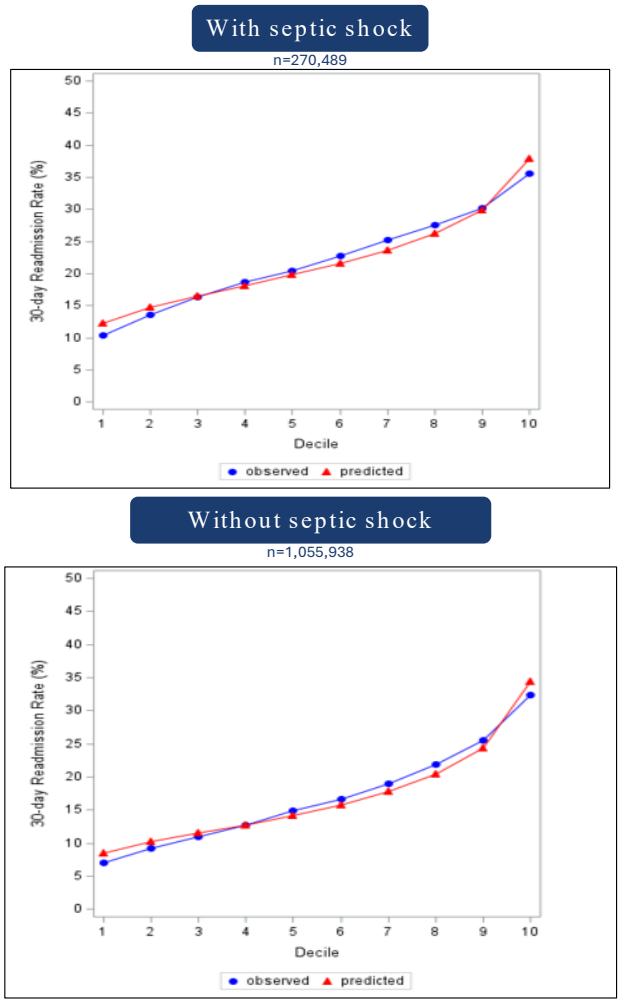

Figure 2. Calibration Plot for Patients with and without Septic Shock in Sepsis Readmission Validation Cohort (January 1, 2022-December 31, 2023)

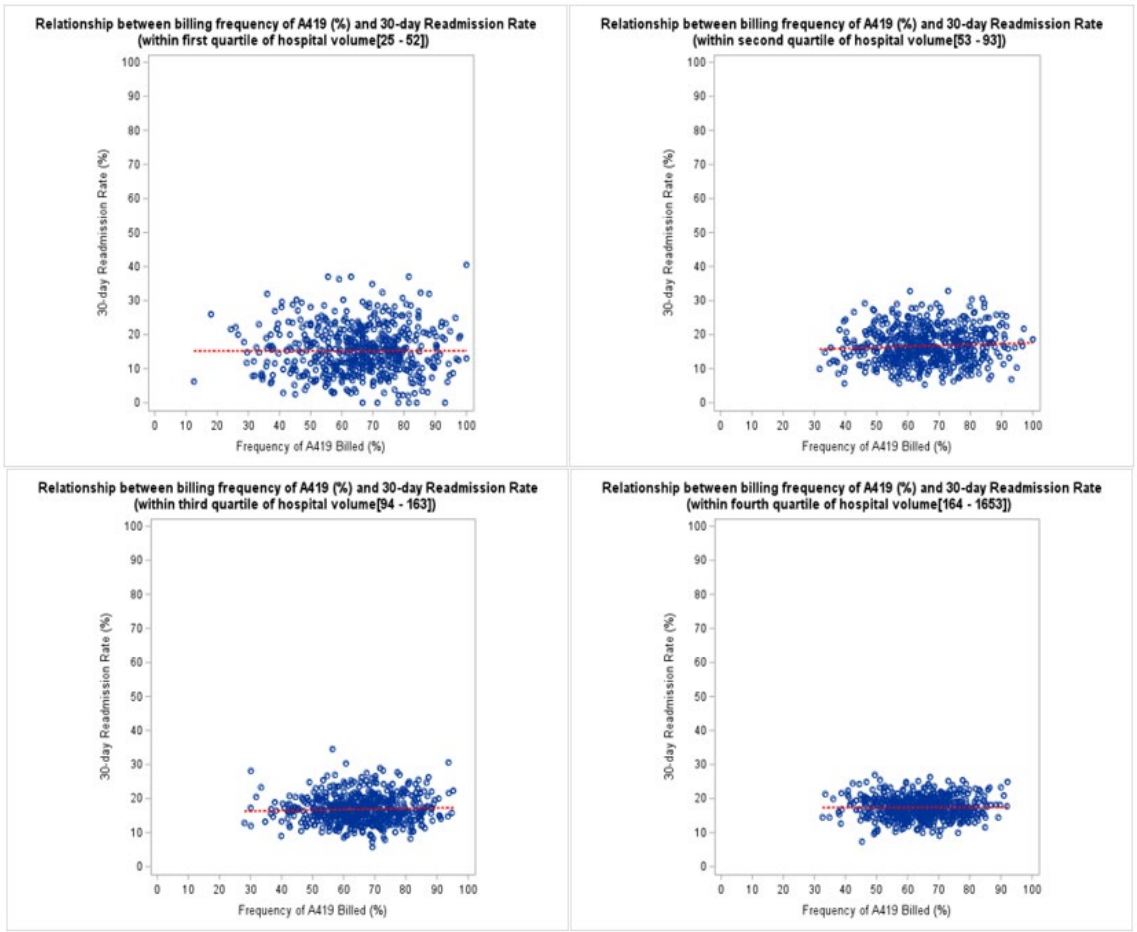

Figure D.1. Frequency of A41.9 (Sepsis, unspecified organism) and 30-day Readmission Rate Stratified by Hospital Volume

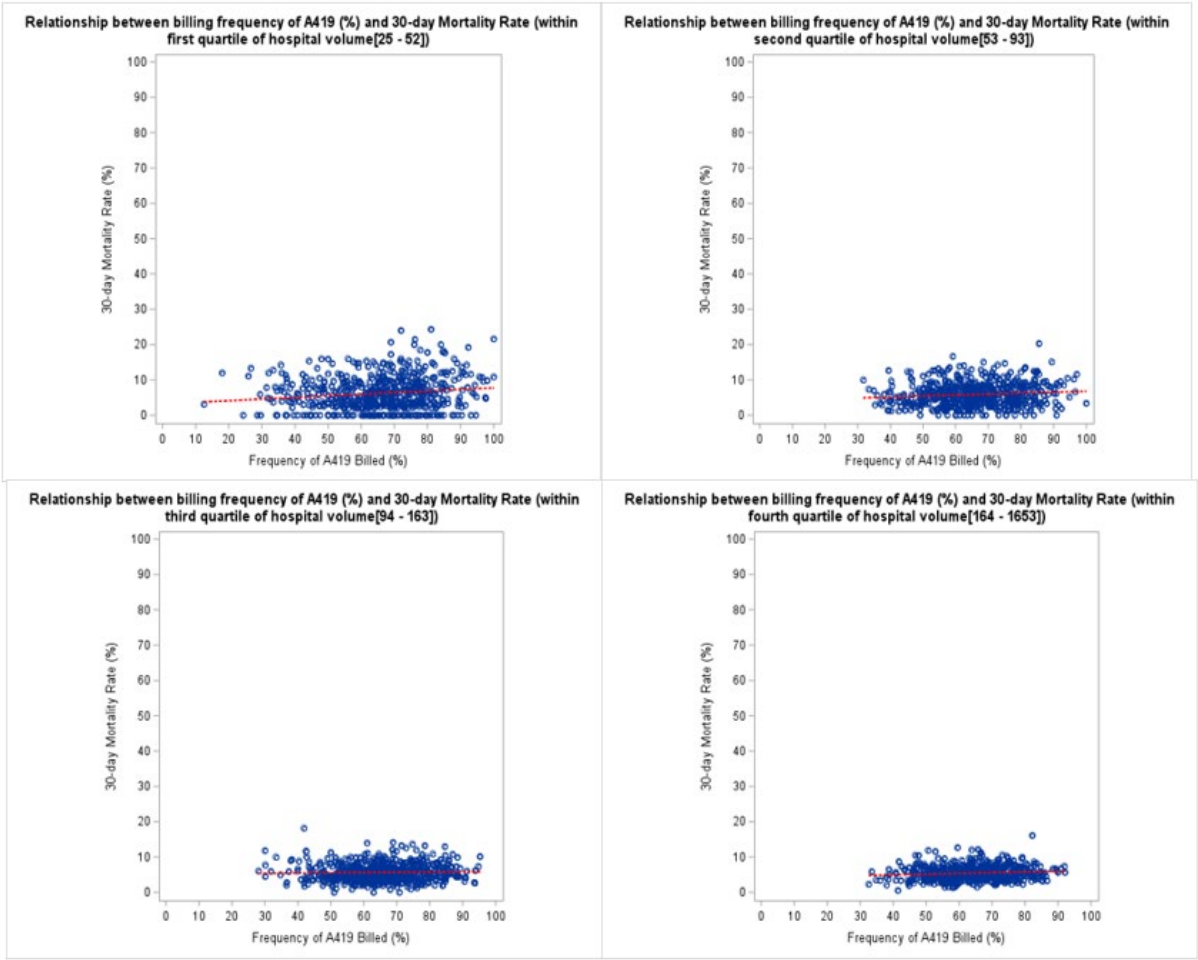

Figure D.2. Frequency of A419 (Sepsis, unspecified organism) and 30-day Mortality Rate by Hospital Volume

Appendix B: Acronyms

Please note: The following list encompasses acronyms that Battelle commonly encounters and uses in its work as a CBE. Not all acronyms will appear in this document.

Acronym	Definition
ACA	Affordable Care Act
ACC	American College of Cardiology
ACO	Accountable Care Organization
AGC	After Government Contract
AHIP	Formerly known as American Health Insurance Partnership
AHRQ	Agency for Healthcare Research and Quality
AI Pilot	Artificial Intelligence Pilot
AIPAC	Advanced Illness and Post-Acute Care
AIR	American Institutes for Research
ANOVA	Analysis of Variance
ASCO	American Society of Clinical Oncology
ASCQR	Ambulatory Surgical Center Quality Reporting Program
ASCs	Ambulatory Surgical Centers
C&E	Cost and Efficiency
CAH	Critical Access Hospital
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CBE	Consensus-Based Entity
CBE ID	Consensus-Based Entity Identification
CDC	Centers for Disease Control and Prevention
CDS	Clinical Decision Support
CDSS	Clinical Decision Support System
CIS	Clinical Information Systems
CMIT	CMS Measures Inventory Tool
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
CO	Contracting Officer
COIs	Conflicts of Interest
COR	Contracting Officer's Representative
CPG	Clinical Practice Guidelines

Acronym	Definition
CQL	Clinical Quality Language
CQM	Clinical Quality Measure
CQMC	Core Quality Measures Collaborative
CSAC	Consensus Standards Approval Committee
DEL	CMS Data Element Library
Del.	Deliverable
DOI	Disclosure of Interest
dQMs	Digital Quality Measures
DRC	Direct Reference Code
E&M	Endorsement and Maintenance
EC	Electronic Copy
eCQI	Electronic Clinical Quality Improvement
eCQM	Electronic Clinical Quality Measures
ED	Emergency Department
EHR	Electronic Health Record
EPC	Evidence-Based Practice Center
ESRD QIP	End-Stage Renal Disease Quality Improvement Program
EVI	Expected Value of Information
FAQs	Frequently Asked Questions
FFS	Fee-For-Service
FHIR	Fast Healthcare Interoperability Resources
FMS	Full Measure Submission
FY	Fiscal Year
HACRP	Hospital-Acquired Conditions Reduction Program
HCBS	Home and Community-Based Services
HCD	Human-Centered Design
HEDIS	Healthcare Effectiveness Data and Information Set
HH QRP	Home Health Quality Reporting Program
HH VBP	Home Health Value-Based Purchasing
HHS	Department of Health and Human Services
HIQR	Hospital Inpatient Quality Reporting
HOPD	Hospital Outpatient Department
HOPE	Hospice Outcomes and Patient Evaluation

Acronym	Definition
HOQR	Hospital Outpatient Quality Reporting
HQMF	Health Quality Measurement Format
HQR	Hospice Quality Reporting
HQRP	Hospice Quality Reporting Program
HRRP	Hospital Readmission Reduction Program
HSAG	Health Services Advisory Group
HTML	Hypertext Markup Language
HVBP	Hospital Value-Based Purchasing
IAW	In Accordance With
ICD	International Classification of Diseases (International Statistical Classification of Diseases and Related Health Problems)
IHI	Institute for Healthcare Improvement
IMPACT Act	Improving Medicare Post-Acute Care Transformation Act
IPF	Inpatient Psychiatric Facilities
IPF QRP	Inpatient Psychiatric Facility Quality Reporting Program
IPPS	Inpatient Prospective Payment System
IQR	Inpatient Quality Reporting
IR	Initial Recognition
IRF	Inpatient Rehabilitation Facilities
IRF QRP	Inpatient Rehabilitation Facility Quality Reporting Program
IT	Information Technology
ITS	Intent to Submit
LLMs	Large Language Models
LTACH	Long-Term Acute Care Hospitals
LTCH	Long-Term Care Hospital
LTCH QRP	Long-Term Care Hospital Quality Reporting Program
MA	Medicare Advantage
MACRA	Medicare Access and CHIP Reauthorization Act
MACS	Medicaid: Adult Core Set
MAQIP	Medicare Advantage Quality Improvement Program
MAT	Measure Authoring Tool
MCCS	Medicaid: Child Core Set
MCO	Managed Care Organization
MERIT	Measures Under Consideration Entry/Review Tool

Acronym	Definition
MIPPA	Medicare Improvement for Patients and Providers Act of 2008
MIPS	Merit-based Incentive Payment System
MLTSS	Managed Long-Term Service and Support
MMS	Measures Management System
MS-DOI	Measure-Specific Disclosure of Interest
MSR	Measure Set Review
MSSP	Medicare Shared Savings Program
MUC	Measures Under Consideration
n	Sample Size
NCDC	National Consensus Development and Strategic Planning for Health Care Quality Measurement Contract
NCQA	National Committee for Quality Assurance
NHDNG	Novel Hybrid Delphi and Nominal Groups
NHQI	Nursing Home Quality Initiative
NLP	Natural Language Processing
NQF	National Quality Forum
NQS	CMS National Quality Strategy
NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
OP	Option Period
OY	Option Year
PA	Preliminary Assessment
PAC/LTC	Post-Acute Care/Long-Term Care
PaLS	Patient Life Goals Survey
PAM	Patient Activation Measure
PCHQR	PPS-Exempt Cancer Hospital Quality Reporting
PDF	Portable Document Format
PIE Form	Pre-Meeting Initial Evaluation Form
PL	Project Leader
PM	Project Manager
PMP	Project Management Plan
POC	Point of Contact
PPS	Prospective Payment System
PQA	Pharmacy Quality Alliance

Acronym	Definition
PQM	Partnership for Quality Measurement
PRA	Paperwork Reduction Act
PRMR	Pre-Rulemaking Measure Review
PRO	Patient-Reported Outcome
PROM	Patient-Reported Outcome Measure
PRO-PMs	Patient-Reported Outcome Performance Measures
Q&A	Question & Answer
QC	Quality Control
QCDR	Qualified Clinical Data Registries
QDM	Quality Data Model
QI	Quality Improvement
QMDSA	Quality Measure Developer and Steward Agreement
QPP	Quality Payment Program
REHQR	Rural Emergency Hospital Quality Reporting (Program)
SDOH	Social Determinants of Health
SES	Socioeconomic Status
SLIN	Subline Item Number
SMEs	Subject Matter Experts
SMP	Scientific Measures Panel
SNF	Skilled Nursing Facilities
SNF QRP	Skilled Nursing Facility Quality Reporting Program
SNF VBP	Skilled Nursing Facility Value-Based Purchasing
SOP	Standard Operating Procedure
SOW	Statement of Work
SSA	Social Security Administration
STAR	Submission Tool and Repository
SUD	Substance Use Disorder
TBD	To Be Determined
TEP	Technical Expert Panel
TL	Task Lead
UMLS	Unified Medical Language System
USCDI	United States Core Data for Interoperability
VSAC	Value Set Authority Center

Acronym	Definition
Yale CORE	Yale Center for Outcomes Research and Evaluation

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