2024 Pre-Rulemaking Measure Review
Preliminary Assessment

MUC ID	Title
MUC2024-067	Proportion Of Patients Who Died From Cancer Admitted to the ICU in the Last 30 Days Of Life
Measure Steward & Developer	**Proposed CMS Programs**
American Society of Clinical Oncology (ASCO)	Hospital Inpatient Quality Reporting Program

Measure Overview
Developer-provided rationale: CMS recognizes the importance of curtailing aggressive care at the end-of-life period for patients diagnosed with cancer. Unfortunately, studies have suggested that over time, cancer care is becoming more aggressive especially near the end-of-life period. Intensive care unit (ICU) admissions have often been deemed as an indicator of "aggressive care" and typically are used to gauge the quality of care provided to late-stage cancer patients. CMS advocates for early integration of palliative care/hospice services for patients with late-stage cancer in order to avoid aggressive measures at the end of life. With this measure, CMS hopes providers can evaluate internal processes and make the necessary changes through quality improvement initiatives to ultimately improve a patient's death experience and improve patient and caregiver/family satisfaction. Additionally, the reduction of ICU admissions at the end of life should reduce overall unnecessary resource utilization costs
CMS-provided program rationale: CMS is considering adding this measure to the HIQR program to bolster the Cancer measure portfolio and to assess the end-of-life period care and services provided at this time. This measure is currently being reported in the Prospective Payment System- (PPS-) Exempt Cancer Hospital (PCH) Reporting Program and can be beneficial in the HIQR Program to promote patient end-of-life care and to assist with end-of-life decisions. CMS advocates for early integration of palliative care/hospice services for patients with late-stage cancer in order to avoid aggressive measures at the end of life. CMS intends for this measure to assist providers in evaluating internal processes and in making the necessary changes through quality improvement initiatives to ultimately improve a patient's death experience and improve patient and caregiver/family satisfaction. Additionally, the measure will potentially reduce end-of-life utilization of unnecessary resources and costs.
Description: Proportion of patients who died from cancer admitted to the ICU in the last 30 days of life.

The analyses upon which this publication is based were performed under Contract Number 75FCMC23C0010, entitled, "National Consensus Development and Strategic Planning for Health Care Quality Measurement," sponsored by the Department of Health and Human Services, Centers for Medicare & Medicaid Services.

Measure Overview

Measure background: Measure currently used in a Medicare program and is being submitted without substantive changes for a new or different program

Numerator: Patients who died from cancer admitted to the ICU in the last 30 days of life.

The patient counts toward the numerator if the patient has an inpatient claim including revenue codes 200-219 (ICU) for a hospitalization with an admission date within 30 days of death.

If the admission date is beyond the 30 days of death but discharge date is within 30 days, and the inpatient claim for that hospitalization includes revenue codes 200-219 (ICU), then determine whether the ICU room change occurs within the 30 days window. If so, the patient counts toward the numerator.

Exclusions: N/A

Denominator: The number of patients attributed to each hospital for the performance period constitutes the hospital's denominator for this measure. A minimum of 25 patients must be attributed to a hospital facility within the measurement period for the measure to be applied to that facility.

Population (Cohort):

The measure population includes all patients 65+ who died with a cancer diagnosis in the data collection period. The population is determined by the following (in order):

- Patients who died in the data collection period
- Patients aged 65 or greater as of the date of death
- Patients continuously enrolled in Medicare Parts A&B during the last 12 months before death
- Patients enrolled in an HMO in the 12 months before death are excluded
- Patients with at least 2 cancer-related IP, OP or Hospice visits during the 6 months before death. A cancer-related visit is defined as any one day with a claim/s that includes a cancer diagnosis listed within the top 3 diagnosis codes for that claim.

For outpatients, a claims day is any one day with a claim(s) that includes a cancer diagnosis within the top 3 diagnosis codes on the claim. Multiple visits on same day count as one day

For inpatients, each admission with a cancer diagnosis within the top 3 diagnosis codes on the claim counts as one claims day

Attribution:

Patients are attributed to the hospital/facility where the majority (> 50%) of all claims (inpatient (IP)+ outpatient (OP) occurs.

Patients without any outpatient visits or inpatient stays in the last 6 months before death are removed

Measure Overview

Patients who have no individual hospital/facility with more than one claim in last 6 months before death are removed

If a patient does not have a total majority of all claims (IP + OP) >0.5 at a single hospital A:

- Attribute to hospital with highest # of outpatient claims; if # OP claims tied,
- Attribute to hospital with highest # of inpatient claims; if #IP claims tied,
- Attribute to hospital with last IP claim before death

Attributed volume:

For meaningful and reliable measurement, a hospital facility must have at least 25 patients attributed during the measurement period. The measure will not be calculated/reported for hospitals with fewer than 25 attributed patients.

Exclusion:

- Patients enrolled in an HMO in the 12 months before death are excluded

Measure type: Intermediate outcome	**Measure has multiple scores:** No **Measure is a composite:** No **Measure is digital and/or an eCQM:** No **Measure is a paired or group measure:** No
Level of analysis: Facility	**Data source(s):** Digital-Administrative systems: Claims Data
Care setting(s): Prospective Payment Systems (PPS)-exempt cancer hospital	**Risk adjustment or stratification:** No
CBE endorsement status: Endorsed; CBE ID 0213	**CBE endorsement history:** Endorsed 2022 at the clinician level
Is measure currently used in CMS programs? Yes, PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program (2018-2024)	**Measure addresses statutorily required area?** No

Meaningfulness

Importance	
Type of evidence:	Response in MERIT & Clinical Guidelines or USPSTF (U.S. Preventive Services Task Force) Guidelines; Peer-Reviewed Systematic Review [Source: Measure Information Form (MIF)]
Importance: During the endorsement process in 2022, the committee found the importance of this measure sufficient. This measure addresses the concerning uptick in more aggressive cancer care near the end-of-life. Specifically, this measure focuses on people who died from cancer who were admitted to the ICU in the last 30 days of life. By providers evaluating processes and responding to quality care initiatives, the quality and efficiency of palliative care/hospice services will be improved, leading to reduced unnecessary resource utilization costs and improved patient and caregiver/family satisfaction. The developer cites studies emphasizing an increased propensity for ICU use in the last 30 days of life between 2000 and 2009 (5% increase) and a considerable proportion of cancer patients having been admitted to the ICU in the last 30 days of life (18.8%).	
Rating: Met; Prior CBE Endorsement	

Measure Performance

Tables 1 and 2 show deciles (i.e., the data sorted and broken into 10 equal parts) by performance score and reliability based on the information provided for the performance score and calculated reliability for the 11 entities described in the testing submission.

Interpretation: The mean score for the 11 entities described in the testing submission for this measure was 31.7. For this proportion measure, a lower score indicates better quality of care.

Table 1. MUC2024-067 Performance Score Deciles

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score (SD)	31.7 (10.8)	45.5	45.5	45.4	43.5	39.5	34.8	31.3	27.5	24.5	21.5	17.4	16.3
Number of Entities	11	1	1	1	1	1	1	1	1	1	1	2	1

Conformance
Measure alignment with conceptual intent: This measure's specification is appropriate and aligned with the measure focus (Patients who died from cancer admitted to the ICU in the last 30 days of life) among patients 65 and older who died with a cancer diagnosis during the data collection period. Numerator and denominator populations are appropriate and exclusions align with clinical evidence.
Rating: Met, Prior CBE Endorsement

Feasibility	
eCQM feasibility testing conducted:	No [Source: MERIT Submission Form]
Feasibility: Developer reports that all data elements required for the measure are defined in electronic sources and align with United States Core Data for Interoperability (USCDI)/USCDI+ quality standard definitions. Aligning with USCDI standards for data elements can promote interoperability and improve feasibility.	
Rating: Met, Prior CBE Endorsement	

Validity	
Validity testing:	Face Validity & Empiric Validity [Source: MERIT Submission, Measure Testing]
Testing level(s):	Facility
Validity: In face validity testing, out of 20 voting experts, 16 (80%) agreed the cost measure could distinguish good from poor quality care, and four (20%) were undecided, citing the lack of risk adjustment for the measure as the reason for their uncertainty. Developer described empirical validity testing procedures, which were performed at the facility level. The developer identified and assessed the correlation of each of the four end of life EOL measures with other measures that target the same (or similar) domain of quality for the same or similar patient populations. The developer indicated data year and fiscal year of use (FY2024). Among the 64 comparisons, only two were statistically significant with moderate correlation values. This is most likely due to the very small number of PCH hospitals. The two correlations that reached statistical significance were between "PHC-34: Proportion of patients who died from cancer not admitted to hospice" and "PCH-36: 30-day Cancer Readmission". The result that two of the four EOL measures were significantly associated with other in-use measures may indicate that only those items have an acceptable level of validity in this population. The committee should consider implications of these results for the wider program.	
Threats to validity: Measure is not risk adjusted and is not recommended for stratification.	
Rating: Met, Prior CBE Endorsement	

Reliability	
Reliability testing method(s):	Signal-to-Noise [Source: MERIT Submission]
Testing level:	Facility
Reliability discussion: The numerator and denominator for this measure are well defined. The developer calculated reliability using Adams signal-to-noise method using a dataset consisting of 9,022 patients across 11 facilities. The median reliability is 0.977, and the minimum reliability is 0.902. All 11 of the entities have a reliability >0.6, suggesting that this measure is capable of differentiating entities by quality of performance.	
Additional Reliability Analyses: For Table 2, Battelle used the performance and reliability data provided and approximated decile averages by interpolation.	
Rating: Met, Prior CBE Endorsement	

Reliability Table

Table 2 shows deciles by performance score and reliability based on the information provided for the performance score and calculated reliability for the 11 entities described in the testing submission. Battelle created this table to provide reviewers with a standardized format to assess reliability.

Interpretation: All 11 of the entities have a reliability >0.6, suggesting that this measure is capable of differentiating entities by quality of performance.

Table 2. MUC2024-067 Mean Reliability (by Reliability Decile)

Mean	SD	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	IQR
0.98	0.013	0.902	0.957	0.962	0.966	0.970	0.975	0.978	0.981	0.984	0.987	0.989	0.993	0.018

Usability	
Usability considered in application:	Yes [Source: MERIT Submission]
Usability discussion: Measure is currently in use (Prospective Payment System [PPS]-Exempt Cancer Hospital Quality Reporting [PCHQR] Program [2018-2024]). Developer notes no unintended consequences have been identified. Submission materials report that the measure is closely monitored by the program and measure steward to identify any potential unintended consequences.	
Rating: Met, Prior CBE Endorsement	

External Validity	
Was this measure tested in the same target population as the CMS program?	Yes
External validity discussion: The developer tested this measure in PPS-exempt cancer hospital setting with a target population of Medicare fee-for-service patients. The committee should consider if further inclusion of acute care settings could strengthen external validity.	
Rating: Met, Prior CBE Endorsement	

Appropriateness of Scale

Similar or related measures in program(s):	The developer did not identify related or competing measures.
Measure appropriateness, equity, and value across target populations/measured entities: The developer's review of measures did not identify any similar or competing measures, suggesting that this measure would fill a gap within the current program measure set. The focus and target population of this measure align with the intent and population of the program. Regarding equity of this measure's performance and benefit across populations, the developer's literature review and analysis do not provide sufficient information to assess the potential for differential benefit or harm to specific subgroups of participating entities or their patient populations. The committee should consider the distribution of benefit and risks/burdens of the measure within the proposed program population.	

Time to Value Realization

Plan for near- and long-term impacts after implementation:	No
Measure implementation impacts over time: While the measure developer briefly mentions potential outcomes for their measure on patient populations, there may be a need for further examination of near- and long-term impacts of this measure after implementation across provider and patient populations. Questions for the committee to consider: • What are the potential near- and long-term impacts of this measure on measured entities, the selected CMS program, and patient populations? • Will benefits and burdens associated with this measure be realized within an appropriate implementation time frame? • How will this measure mature through revisions in the future if added to the proposed CMS program?	