
CBE ID

0216

Title

Percentage of Patients who Died with Cancer Enrolled in Hospice For At Least 3 Days
Immediately Before Death (Registry version)

Project

Advanced Illness and Post-Acute Care

Endorsement Status

Endorsed

Is Under Review

Yes

Next Maintenance Cycle

Spring 2026

Previous Endorsement Cycle

Spring 2022

Initial Endorsement

Sun, 09/30/2007 - 20:00

Steward

American Society of Clinical Oncology (ASCO)

1.0 New or Maintenance

Maintenance

1.1 Measure Structure

Single Measure

1.3 Electronic Clinical Quality Measure (eCQM)

No

1.6 Measure Description

Percentage of patients, aged 18 years and older, who died with cancer and were enrolled in hospice for at least 3 days immediately before death

1.6a Material Specification Change(s)

Yes

1.6b Summary of Specification Changes

This denominator has been broadened to capture all adult patients who died with cancer instead of solely looking at patients admitted to hospice. This change harmonizes this measure with ASCO's other end-of-life measures.

The intent of the numerator has not changed, but the language has been modified to encourage hospice, which now makes the measure proportional instead of inverse.

1.7 Measure Type

Intermediate Outcome

1.8 Level of Analysis

Clinician: Group/Practice, Clinician: Individual

1.9 Care Setting

Ambulatory Care: Clinic, Ambulatory Care: Clinician Office, Ambulatory Care: Office, Clinician Office/Clinic

1.10 Measure Rationale

Hospice is the most established model of palliative care for patients with a prognosis of <6 months and is eligible for coverage by third-party payers and Medicare (National Comprehensive Cancer Network [NCCN], 2026). Between 2022 and 2023, the median length of hospice stay amongst Medicare beneficiaries was ~18 days (Medicare Payment Advisory Commission [MedPAC], 2025) and ~one-quarter of patients received care for 5 days or less before passing away (MedPAC, 2025). This is even though the hospice benefit is at least six months or longer if needed. This short length of stay means that the patient and family are not receiving the full benefit of hospice services such as spiritual counseling, social work, and complex symptom management (MedPAC, 2025) and the care team has limited time to get a plan of care in place before death. Patients who use hospice, compared with those who do not use hospice, have markedly improved symptoms, less caregiver distress, reduced costs of approximately \$8,700 per Medicare beneficiary, and, according to two published reports, actually live longer (Ferrell et al., 2017). ASCO's End of Life Measures Technical Expert Panel emphasized that performance is not expected to be perfect on this quality measure. A margin of error should be expected to account for scenarios such as patient refusal of hospice and barriers to access hospice.

REFERENCES:

1. Ferrell, B. R., Temel, J. S., Temin, S., Alesi, E. R., Balboni, T. A., Basch, E. M., Firn, J. I., Paice, J. A., Peppercorn, J. M., Phillips, T., Stovall, E. L., Zimmermann, C., & Smith, T. J. (2017). Integration of Palliative Care Into Standard Oncology Care: American Society of Clinical Oncology Clinical Practice Guideline Update. *Journal of Clinical Oncology*, 35(1), 96-112. Retrieved from <https://doi.org/10.1200/jco.2016.70.1474>.

2. Medicare Payment Advisory Commission. (2025, March). *Hospice Services* (Chapter 9). *Report to the Congress: Medicare Payment Policy*. https://www.medpac.gov/wp-content/uploads/2025/03/Mar25_Ch9_MedPAC_Report_To_Congress_SEC.pdf
3. National Comprehensive Cancer Network. (2026). *NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Palliative Care* (Version 1.2026). https://www.nccn.org/professionals/physician_gls/pdf/palliative.pdf

1.11 Measure Webpage

None.

1.13 Data Dictionary

Not attached. I attest that all information will be provided where codes and/or value sets are needed (1.14a - 1.15c).

1.14 Numerator

Patients enrolled in hospice for at least 3 days immediately before death

1.14a Numerator Details

NUMERATOR:

Patients enrolled in hospice for at least 3 days immediately before death

Numerator Instruction:

Enrolled in hospice for at least 3 days immediately before death can be calculated as follows:

(Date of death minus **Most Recent** Date of Hospice Admission) $\geq$ 3 days

Numerator Options:

Performance Met: Patient enrolled in hospice for at least 3 days immediately before death (GXXXX)

OR

Denominator Exception: Patient not enrolled in hospice due to 1) receipt or in process of receipt of bone marrow or peripheral blood stem cell transplant (transplant status) in the last 60 days of life, or 2) receipt or in process of receipt of CAR T cell therapy in the last 60 days of life (GXXXX)

Note: The above treatments are not covered in hospice, but may be appropriate for select patients

at the end of life.

OR

Denominator Exception: Patients given hydroxyurea or BTK inhibitors
(GXXXX)

Note: Hydroxyurea and BTK inhibitors may be inappropriate to withdraw at the end of life and/or are used for palliative purposes, however these are not covered by hospice.

OR **Performance Not Met:** Patient enrolled in hospice less than 3 days immediately before death **(GXXXX)**

Note: GXXXX is a placeholder for HCPCS codes used to report Numerator Options

1.15 Denominator

Patients, aged 18 years and older, who died with cancer

1.15a Denominator Details

Patients, aged 18 years and older, who died with cancer

Denominator Criteria (Eligible Cases):

Patients aged ≥ 18 years on date of any of the eligible patient encounters

AND

Encounter diagnosis of cancer (ICD-10-

CM): C00.0, C00.1, C00.2, C00.3, C00.4, C00.5, C00.6, C00.8, C00.9, C01, C02.0, C02.1, C02.2, C02.3, C02.4, C02.8, C02.9, C03.0, C03.1, C03.9, C04.0, C04.1, C04.8, C04.9, C05.0, C05.1, C05.2, C05.8, C05.9, C06.0, C06.1, C06.2, C06.80, C06.89, C06.9, C07, C08.0, C08.1, C08.9, C09.0, C09.1, C09.8, C09.9, C10.0, C10.1, C10.2, C10.3, C10.4, C10.8, C10.9, C11.0, C1

1.1, C11.2, C11.3, C11.8, C11.9, C12, C13.0, C13.1, C13.2, C13.8, C13.9, C14.0, C14.2, C14.8, C15.3, C15.4,

C15.5, C15.8, C15.9, C16.0, C16.1, C16.2, C16.3, C16.4, C16.5, C16.6, C16.8, C16.9, C17.0, C17.1, C17.2,

C17.3, C17.8, C17.9, C18.0, C18.1, C18.2, C18.3, C18.4, C18.5, C18.6, C18.7, C18.8, C18.9, C19, C20,

C21.0, C21.1, C21.2, C21.8, C22.0, C22.1, C22.2, C22.3, C22.4, C22.7, C22.8, C22.9, C23, C24.0, C24.1,

C24.8, C24.9, C25.0, C25.1, C25.2, C25.3, C25.4, C25.7, C25.8, C25.9, C26.0, C26.1, C26.9, C30.0,

C30.1, C31.0, C31.1, C31.2, C31.3, C31.8, C31.9, C32.0, C32.1, C32.2, C32.3, C32.8, C32.9, C33, C34.00, C34.01, C34.02, C34.10, C34.11, C34.12, C34.2, C34.30, C34.31, C34.32, C34.80, C34.81, C34.82, C34.90, C34.91, C34.92, C37, C38.0, C38.1, C38.2, C38.3, C38.4, C38.8, C39.0, C39.9, C40.00, C40.01, C40.02, C40.10, C40.11, C40.12, C40.20, C40.21, C40.22, C40.30, C40.31, C40.32, C40.80, C40.81, C40.82, C40.90, C40.91, C40.92, C41.0, C41.1, C41.2, C41.3, C41.4, C41.9, C43.0, C43.10, C43.111, C43.112, C43.121, C43.122, C43.20, C43.21, C43.22, C43.30, C43.31, C43.39, C43.4, C43.51, C43.52,

C43.59, C43.60, C43.61, C43.62, C43.70, C43.71, C43.72, C43.8, C43.9, C44.00, C44.01, C44.02, C44.09, C44.101, C44.1021, C44.1022, C44.1091, C44.1092, C44.111, C44.1121, C44.1122, C44.1191, C44.1192, C44.121, C44.1221, C44.1222, C44.1291, C44.1292, C44.131, C44.1321, C44.1322, C44.1391, C44.1392, C44.191, C44.1921, C44.1922, C44.1991, C44.1992, C44.201, C44.202, C44.209, C44.211, C44.212, C44.219, C44.221, C44.222, C44.229, C44.291, C44.292, C44.299, C44.300, C44.301, C44.309, C44.310, C44.311, C44.319, C44.320, C44.321, C44.329, C44.390, C44.391, C44.399, C44.40, C44.41, C44.42, C44.49, C44.500, C44.501, C44.509, C44.510, C44.511, C44.519, C44.520, C44.521, C44.529, C44.590, C44.591, C44.599, C44.601, C44.602, C44.609, C44.611, C44.612, C44.619, C44.621, C44.622, C44.629,

C44.691, C44.692, C44.699, C44.701, C44.702, C44.709, C44.711, C44.712, C44.719, C44.721, C44.722,

C44.729, C44.791, C44.792, C44.799, C44.80, C44.81, C44.82, C44.89, C44.90, C44.91, C44.92, C44.99, C45.0, C45.1, C45.2, C45.7, C45.9, C46.0, C46.1, C46.2, C46.3, C46.4, C46.50, C46.51, C46.52, C46.7,

C46.9, C47.0, C47.10, C47.11, C47.12, C47.20, C47.21, C47.22, C47.3, C47.4, C47.5, C47.6, C47.8,

C47.9, C48.0, C48.1, C48.2, C48.8, C49.0, C49.10, C49.11, C49.12, C49.20, C49.21, C49.22, C49.3,

C49.A0, C49.A1, C49.A2, C49.A3, C49.A4, C49.A5, C49.A9, C49.4, C49.5, C49.6, C49.8, C49.9, C4A.0, C4A.10, C4A.111, C4A.112, C4A.121, C4A.122, C4A.20, C4A.21, C4A.22, C4A.30, C4A.31, C4A.39, C4A.4, C4A.51, C4A.52, C4A.59, C4A.60, C4A.61, C4A.62, C4A.70, C4A.71, C4A.72, C4A.8, C4A.9,

C50.011, C50.012, C50.019, C50.021, C50.022, C50.029, C50.111, C50.112, C50.119, C50.121, C

50.122,
C50.129, C50.211, C50.212, C50.219, C50.221, C50.222, C50.229, C50.311, C50.312, C50.319, C
50.321,
C50.322, C50.329, C50.411, C50.412, C50.419, C50.421, C50.422, C50.429, C50.511, C50.512, C
50.519,
C50.521, C50.522, C50.529, C50.611, C50.612, C50.619, C50.621, C50.622, C50.629, C50.811, C
50.812, C50.819, C50.821, C50.822, C50.829, C50.911, C50.912, C50.919, C50.921, C50.922,
C50.929, C51.0, C51.1, C51.2, C51.8, C51.9, C52, C53.0,
C53.1, C53.8, C53.9, C54.0, C54.1, C54.2, C54.3, C54.8, C54.9, C55, C56.1, C56.2, C56.3, C56.9,
C57.00, C57.01, C57.02, C57.10, C57.11, C57.12, C57.20, C57.21, C57.22, C57.3, C57.4, C57.7,
C57.8, C57.9, C58, C60.0, C60.1, C60.2, C60.8, C60.9, C61, C62.00, C62.01, C62.02, C62.10,
C62.11, C62.12, C62.90, C62.91, C62.92, C63.00, C63.01, C63.02, C63.10, C63.11, C63.12, C63.2,
C63.7, C63.8, C63.9, C64.1, C64.2, C64.9, C65.1, C65.2, C65.9, C66.1, C66.2,

C66.9, C67.0, C67.1, C67.2, C67.3, C67.4, C67.5, C67.6, C67.7, C67.8, C67.9, C68.0, C68.1,
C68.8, C68.9, C69.00, C69.01, C69.02, C69.10, C69.11, C69.12, C69.20, C69.21, C69.22, C69.30,
C69.31, C69.32, C69.40, C69.41, C69.42, C69.50, C69.51, C69.52, C69.60, C69.61, C69.62,
C69.80, C69.81,
C69.82, C69.90, C69.91, C69.92, C70.0, C70.1, C70.9, C71.0, C71.1, C71.2, C71.3, C71.4, C71.5,
C71.6,

C71.7, C71.8, C71.9, C72.0, C72.1, C72.20, C72.21, C72.22, C72.30, C72.31, C72.32, C72.40,
C72.41,
C72.42, C72.50, C72.59, C72.9, C73, C74.00, C74.01, C74.02, C74.10, C74.11, C74.12, C74.90, C7
4.91, C74.92, C75.0, C75.1, C75.2, C75.3, C75.4, C75.5, C75.8, C75.9, C76.0, C76.1, C76.2, C76.3,
C76.40,

C76.41, C76.42, C76.50, C76.51, C76.52, C76.8, C77.0, C77.1, C77.2, C77.3, C77.4, C77.5, C77.8,
C77.9,

C78.00, C78.01, C78.02, C78.1, C78.2, C78.30, C78.39, C78.4, C78.5, C78.6, C78.7, C78.80,
C78.89, C79.00, C79.01, C79.02, C79.10, C79.11, C79.19, C79.2, C79.31, C79.32, C79.40, C79.49,
C79.51, C79.52, C79.60, C79.61, C79.62, C79.63, C79.70, C79.71, C79.72, C79.81, C79.82,
C79.89, C79.9, C7A.00, C7A.010, C7A.011, C7A.012, C7A.019, C7A.020, C7A.021, C7A.022,
C7A.023, C7A.024, C7A.025, C7A.026, C7A.029, C7A.090, C7A.091, C7A.092, C7A.093, C7A.094,
C7A.095, C7A.096,
C7A.098, C7A.1, C7A.8, C7B.00, C7B.01, C7B.02, C7B.03, C7B.04, C7B.09, C7B.1, C7B.8, C80.0,
C80.1, C80.2, C81.00, C81.01, C81.02, C81.03, C81.04, C81.05, C81.06, C81.07, C81.08, C81.09,
C81.10, C81.11, C81.12, C81.13, C81.14, C81.15, C81.16, C81.17, C81.18, C81.19, C81.20,
C81.21, C81.22, C81.23, C81.24, C81.25, C81.26, C81.27, C81.28, C81.29, C81.30, C81.31,
C81.32, C81.33, C81.34, C81.35, C81.36, C81.37, C81.38, C81.39, C81.40, C81.41, C81.42,
C81.43, C81.44, C81.45, C81.46, C81.47, C81.48, C81.49, C81.70, C81.71, C81.72, C81.73,
C81.74, C81.75, C81.76, C81.77, C81.78, C81.79, C81.90, C81.91, C81.92, C81.93, C81.94,
C81.95, C81.96, C81.97, C81.98, C81.99, C82.00, C82.01, C82.02, C82.03, C82.04, C82.05,
C82.06, C82.07, C82.08, C82.09, C82.10, C82.11, C82.12, C82.13, C82.14, C82.15, C82.16,
C82.17, C82.18, C82.19, C82.20, C82.21, C82.22, C82.23, C82.24, C82.25, C82.26, C82.27,
C82.28, C82.29, C82.30, C82.31, C82.32, C82.33, C82.34, C82.35, C82.36, C82.37, C82.38,
C82.39, C82.40, C82.41, C82.42, C82.43, C82.44, C82.45, C82.46, C82.47, C82.48, C82.49,

C82.50, C82.51, C82.52, C82.53, C82.54, C82.55, C82.56, C82.57, C82.58, C82.59, C82.60, C82.61, C82.62, C82.63, C82.64, C82.65, C82.66, C82.67, C82.68, C82.69, C82.80, C82.81, C82.82, C82.83, C82.84, C82.85, C82.86, C82.87, C82.88, C82.89, C82.90, C82.91, C82.92, C82.93, C82.94, C82.95, C82.96, C82.97, C82.98, C82.99, C83.00, C83.01, C83.02, C83.03, C83.04, C83.05, C83.06, C83.07, C83.08, C83.09, C83.10, C83.11, C83.12, C83.13, C83.14, C83.15, C83.16, C83.17, C83.18, C83.19, C83.30, C83.31, C83.32, C83.33, C83.34, C83.35, C83.36, C83.37, C83.38, C83.39, C83.50, C83.51, C83.52, C83.53, C83.54, C83.55, C83.56, C83.57, C83.58, C83.59, C83.70, C83.71, C83.72, C83.73, C83.74, C83.75, C83.76, C83.77, C83.78, C83.79, C83.80, C83.81, C83.82, C83.83, C83.84, C83.85, C83.86, C83.87, C83.88, C83.89, C83.90, C83.91, C83.92, C83.93, C83.94, C83.95, C83.96, C83.97, C83.98, C83.99, C84.00, C84.01, C84.02, C84.03, C84.04, C84.05, C84.06, C84.07, C84.08, C84.09, C84.10, C84.11, C84.12, C84.13, C84.14, C84.15, C84.16, C84.17, C84.18, C84.19, C84.40, C84.41, C84.42, C84.43, C84.44, C84.45, C84.46, C84.47, C84.48, C84.49, C84.60, C84.61, C84.62, C84.63, C84.64, C84.65, C84.66, C84.67, C84.68, C84.69, C84.7A, C84.70, C84.71, C84.72, C84.73, C84.74, C84.75, C84.76, C84.77, C84.78, C84.79, C84.90, C84.91, C84.92, C84.93, C84.94, C84.95, C84.96, C84.97, C84.98, C84.99, C84.A0, C84.A1, C84.A2, C84.A3, C84.A4, C84.A5, C84.A6, C84.A7, C84.A8, C84.A9, C84.Z0, C84.Z1, C84.Z2, C84.Z3, C84.Z4, C84.Z5, C84.Z6, C84.Z7, C84.Z8, C84.Z9, C85.10, C85.11, C85.12, C85.13, C85.14, C85.15, C85.16, C85.17, C85.18, C85.19, C85.20, C85.21, C85.22, C85.23, C85.24, C85.25, C85.26, C85.27, C85.28, C85.29, C85.80, C85.81, C85.82, C85.83, C85.84, C85.85, C85.86, C85.87, C85.88, C85.89, C85.90, C85.91, C85.92, C85.93, C85.94, C85.95, C85.96, C85.97, C85.98, C85.99, C86.0, C86.1, C86.2, C86.3, C86.4, C86.5, C86.6, C88.0, C88.2, C88.3, C88.4, C88.8, C88.9, C90.00, C90.01, C90.02, C90.10, C90.11, C90.12, C90.20, C90.21, C90.22, C90.30, C90.31, C90.32, C91.00, C91.01, C91.02, C91.10, C91.11, C91.12, C91.30, C91.31, C91.32, C91.40, C91.41, C91.42, C91.50, C91.51, C91.52, C91.60, C91.61, C91.62, C91.90, C91.91, C91.92, C91.A0, C91.A1, C91.A2, C91.Z0, C91.Z1, C91.Z2, C92.00, C92.01, C92.02, C92.10, C92.11, C92.12, C92.20, C92.21, C92.22, C92.30, C92.31, C92.32, C92.40, C92.41, C92.42, C92.50, C92.51, C92.52, C92.60, C92.61, C92.62, C92.90, C92.91, C92.92, C92.A0, C92.A1, C92.A2, C92.Z0, C92.Z1, C92.Z2, C93.00, C93.01, C93.02, C93.10, C93.11, C93.12, C93.30, C93.31, C93.32, C93.90, C93.91, C93.92, C93.Z0, C93.Z1, C93.Z2, C94.00, C94.01, C94.02, C94.20, C94.21, C94.22, C94.30, C94.31, C94.32, C94.40, C94.41, C94.42, C94.6, C94.80, C94.81, C94.82, C95.00, C95.01, C95.02, C95.10, C95.11, C95.12, C95.90, C95.91, C95.92, C96.0, C96.20, C96.21, C96.22, C96.29, C96.4, C96.5, C96.6, C96.9, C96.A, C96.Z, D37.01, D37.02, D37.030, D37.031, D37.032, D37.039, D37.04, D37.05, D37.09, D37.1, D37.2, D37.3, D37.4, D37.5, D37.6, D37.8, D37.9, D38.0, D38.1, D38.2, D38.3, D38.4, D38.5, D38.6, D39.0, D39.10, D39.11, D39.12, D39.2, D39.8, D39.9, D40.0, D40.10, D40.11, D40.12, D40.8, D40.9, D41.00, D41.01, D41.02, D41.10, D41.11, D41.12, D41.20, D41.21, D41.22, D41.3, D41.4, D41.8, D41.9, D42.0, D42.1, D42.9, D43.0, D43.1, D43.2, D43.3, D43.4, D43.8, D43.9, D44.0, D44.10, D44.11, D44.12, D44.2, D44.3, D44.4, D44.5, D44.6, D44.7, D44.9, D45, D46.0, D46.1, D46.20, D46.21, D46.22, D46.4, D46.9,

D46.A, D46.B, D46.C, D46.Z, D47.01, D47.02, D47.09, D47.1, D47.2, D47.3, D47.4, D47.9, D47.Z1, D47.Z2, D47.Z9, D48.0, D48.2, D48.3, D48.4, D48.5, D48.60, D48.61, D48.62, D48.7, D48.9, D49.0, D49.1, D49.2, D49.3, D49.4, D49.511, D49.512, D49.519, D49.59, D49.6, D49.7, D49.81, D49.89, D49.9

AND

At least two patient encounters during performance period (CPT): 98000, 98001, 98002, 98003, 98004, 98005, 98006, 98007, 98008, 98009, 98010, 98011, 98012, 98013, 98014, 98015, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99242, 99243, 99244, 99245, 99495, 99496, 99441, 99442, 99443

NOTE: Both eligible patient encounters must include a diagnosis of cancer.

AND

Patients who died during performance period: G9859

1.15b Denominator Exclusions

This quality measure has no denominator exclusions, but does have denominator exceptions as noted above in section 1.14a.

1.15c Denominator Exclusions Details

This quality measure has no denominator exclusions, but does have denominator exceptions as noted above in section 1.14a.

1.15d Age Group

Adults (18-64 years), Older Adults (65 years and older)

1.16 Type of Score

Rate/proportion

1.17 Measure Score Interpretation

Better performance = Higher score

1.18 Calculation of Measure Score

The developer provided a Measure Calculation Diagram:

1.18a Attach measure score calculation diagram

[Hospice-Reg_Flow.pdf](#)

1.19 Measure Stratification Details

This measure is not stratified.

1.20 Types of Data Sources

Electronic Health Records, Paper Patient Medical Records, Registries

1.21a Data Collection Tool URL(s)

<http://example.com>

1.25 Data Source Details

This registry-based measure is currently operationalized within the Merit-based Incentive Payment System (MIPS). As a registry-based instrument, it supports a flexible data architecture encompassing Electronic Health Record (EHR) data, Qualified Clinical Data Registry (QCDR) inputs, and manual chart abstraction from paper records.

While CMS maintains confidentiality regarding which specific entities utilize these measures for MIPS reporting, it is established that registries are not subject to licensure requirements for submission. To date, ASCO has received no formal inquiries or concerns regarding administrative burden through official CMS channels. However, through rigorous measure testing and development, ASCO has verified the measure's active implementation within the US Oncology Network (USON)/McKesson registry, which has successfully achieved full electronic specification within their EHR system.

1.26 Minimum Sample Size

Minimum of five (5) patients.

2.1 Attach Logic Model

[Hospice_Registry_LogicModel.docx](#)

2.2 Evidence of Measure Importance

In the United States, cancer is the second leading cause of death overall and the leading cause of death among people younger than 85 years (Siegel et al., 2026). It is projected that in 2026 there will be approximately 2.1 million *new* cancer cases and over half a million cancer deaths (Siegel et al., 2026). While individual patients have their own preferences that can change over time, consistently across various populations, most patients nearing end of life wish to die at home (Gomes et al., 2013). In one national study, family caregivers gave significantly higher EOL care quality ratings for care at home under hospice than to EOL care received in a hospital palliative care unit, hospice inpatient unit, or residential hospice (Zhu et al., 2024).

The goal of *Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death* is to encourage earlier hospice enrollment and encourage timely enrollment in palliative care that focuses on symptom management, rather than low utility and aggressive treatments, among people dying with cancer. This results in a reduction of aggressive interventions and more time in hospice, which ultimately improves patient, family, and caregiver satisfaction. Timely enrollment in palliative care and hospice also reduces resource utilization costs and aligns with MedPAC's goal to reduce high-intensity, low-value care at the end of life by promoting hospice and palliative care (MedPAC, 2025). Studies show that the integration of palliative care into the cancer care continuum improves patient outcomes in many ways, including quality of life, symptoms intensity, and end-of-life care (NCCN, 2026). The seminal NAM report *Dying in America* states that a palliative approach often offers the best chance of maintaining the highest possible quality of life for those living with advanced serious illness (Institute of Medicine [IOM], 2015) and proposes, as a core component to quality end-of-life care, to offer palliative care services and a personalized revision of the care plan, as well as access to services based on the changing needs of the patient and family (IOM, 2015). Community-based or home-based palliative care services have been associated with a reduced need for end-of-life emergency department visits, reduced length and frequency of hospitalizations, and fewer ICU admissions and in-hospital deaths (NCCN, 2026). A recent systematic review looked at peer-reviewed observational/experimental advance care planning and cancer patient-specific studies published between 1990-2022 and found that across ~33,500 patients advance care planning was associated with significantly lower odds of chemotherapy, intensive care, hospital admissions, hospice use fewer than seven days, hospital death, and aggressive care composite measures (Levoy et al., 2023). An analysis of men with advanced prostate cancer who were enrolled in hospice were less likely to receive high-intensity care, including ICU admissions and inpatient hospital stays at the end of life (NCCN, 2026). Another analysis of ~3000 deceased patients showed that hospice enrollment significantly decreased hospitalizations, non-hospice healthcare utilization, and costs of care (NCCN, 2026).

ASCO and NCCN palliative care guidelines contain the following recommendations:

- Clinicians should refer patients with advanced solid tumors and hematologic malignancies to specialized interdisciplinary palliative care teams that provide inpatient and outpatient care early in the course of disease, alongside active treatment of their cancer (Moderate, Strong)
- Palliative care for patients with advanced cancer should be delivered through interdisciplinary palliative care teams, with consultation available in both outpatient and inpatient settings (Intermediate, Moderate)
- Patients with advanced cancer should receive palliative care services, which may include a referral to a palliative care provider. Essential components of palliative care include (Intermediate, Moderate)
 - Rapport and relationship building with patient and family caregivers
 - Symptom, distress, and functional status management (eg, pain, dyspnea, fatigue, sleep disturbance, mood, nausea, or constipation)
 - Exploration of understanding and education about illness and prognosis

- Clarification of treatment goals
 - Assessment and support of coping and spiritual needs
 - Assistance with medical decision making
 - Coordination with other care providers
 - Provision of referrals to other care providers as indicated
-
- Patients with months to weeks to live should be provided with guidance regarding the anticipated course of the disease. Physicians should reassess prognostic awareness and goals of therapy. As functional status worsens, these patients may become more concerned about the side effects of cancer-directed treatment and consider focusing their care on maintaining quality of life. The option of discontinuing anticancer treatment aligned with goals of care and initiating goal-directed supportive care should be discussed. (Category 2A)
 - In general, patients with weeks to days to live (eg, dying patients) and comfort-oriented goals should discontinue all treatments not directly contributing to patient comfort. Intensive palliative care focusing on symptom management should be provided in addition to preparation for the dying process. Referral for hospice care should be placed, if not already done. (Category 2A)

Definitions of Categories of Evidence and Ratings:

- Category 2A: Based upon lower-level evidence, there is uniform NCCN consensus ($\geq 85\%$ support of the Panel) that the intervention is appropriate. *Note there are no Category 1 recommendations within NCCN's guidelines on Palliative Care.*
- Strong Strength of Recommendation: In recommendations for an intervention, the desirable effects of an intervention outweigh its undesirable effects. In recommendations against an intervention, the undesirable effects of an intervention outweigh its desirable effects. All or almost all informed people would make the recommended choice for or against an intervention
- Moderate Quality of Evidence: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

In addition to the literature, ASCO received positive feedback on measure importance via its May 2025 public comment; almost all respondents strongly agreed or agreed with the following statements across all of ASCO's updated EOL measures: "I believe this measure captures what it intends to capture, i.e., promoting early palliative care among dying patients and reducing aggressive interventions at the end of patients' lives" and "I believe this measure differentiates good from poor quality care among providers of healthcare services."

References:

1. Gomes, B., Calanzani, N., Gysels, M., Hall, S., & Higginson, I. J. (2013). Heterogeneity and changes in preferences for dying at home: a systematic review. *BMC palliative care*, 12, 7. <https://doi.org/10.1186/1472-684X-12-7>
2. Institute of Medicine. (2015). *Dying in America: Improving Quality and Honoring Individual Preferences Near The End of Life*. National Academies Press. <https://doi.org/10.17226/18748>
3. Levoy, K., Sullivan, S. S., Chittams, J., Myers, R. L., Hickman, S. E., & Meghani, S. H. (2023). Don't throw the baby out with the bathwater: Meta-analysis of advance care planning and end-of-life cancer care. *Journal of Pain and Symptom Management*, 65(6), e715–e743. <https://doi.org/10.1016/j.jpainsymman.2023.02.003>
4. National Comprehensive Cancer Network. (2026). *NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Palliative Care* (Version 1.2026). https://www.nccn.org/professionals/physician_gls/pdf/palliative.pdf
5. Sanders, J. J., Temin, S., Ghoshal, A., Alesi, E. R., Ali, Z. V., Chauhan, C., Cleary, J. F., Epstein, A. S., Firn, J. I., Jones, J. A., Litzow, M. R., Lundquist, D. M., Mardones, M. A., Nipp, R. D., Rabow, M. W., Rosa, W. E., Zimmermann, C., & Ferrell, B. R. (2024). Palliative Care for Patients with Cancer: ASCO guideline Update. *Journal of Clinical Oncology*, 42(19), 2336–2357. <https://doi.org/10.1200/JCO.24.00542>
6. Siegel, R. L., Kratzer, T. B., Wagle, N. S., Sung, H., & Jemal, A. (2026). Cancer statistics, 2026. *CA: A Cancer Journal for Clinicians*, 76(1), Article e70043. <https://doi.org/10.3322/caac.70043>
7. Zhu, E., McCreedy, E., & Teno, J. M. (2024). Bereaved Respondent Perceptions of Quality of Care by Inpatient Palliative Care Utilization in the Last Month of Life. *Journal of general internal medicine*, 39(6), 893–901. <https://doi.org/10.1007/s11606-023-08588-4>

2.4 Performance Gap

Individual Clinician Performance (158 Entities)

ASCO evaluated performance on the "Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death (Registry version)" measure. Using combined data from January 2023 to December 2024, the study included 158 physicians who met the minimum requirement of five eligible patients (refer to Sections 1.26 and 5.1.1 for details on sample size and testing).

Because this measure tracks hospice utilization, a higher percentage reflects stronger performance in end-of-life care. Results spanned from 0% to 78%, showing a broad spectrum in

how individual physicians coordinate these transitions. The mean performance was 37% ($\pm 17\%$) with a 95% confidence level of $\pm 3\%$; the median was slightly higher at 38%.

The distribution shows a negligible negative skew of -0.02, indicating that performance is relatively balanced around the mean, though it still leans slightly toward higher values. Notably, the mode is 17%, meaning that the most frequent individual performance level among physicians was significantly lower than the average. These results show that the highest-performing physician (78%) outperformed the median by 105% (2.05 times), while those at the bottom (0%) represent a significant gap in service. For the physicians performing below the median, these results highlight a clear opportunity to improve the timing of hospice referrals and ensure vulnerable patients receive the full benefit of palliative services.

Practice Performance (10 Entities)

ASCO evaluated performance on the "Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death (Registry version)" measure. Using combined data from January 2023 to December 2024, the study included 10 practices who met the minimum requirement of five eligible patients (refer to Sections 1.26 and 5.1.1 for details on sample size and testing).

Because this measure tracks hospice utilization, a higher percentage reflects stronger performance in end-of-life care. Results spanned from 21% to 52%, showing a spectrum in how individual practices coordinate these transitions. The mean performance was 38% ($\pm 11\%$) with a 95% confidence level of $\pm 8\%$; the median was higher at 41%.

The distribution shows a negative skew of -0.29, indicating that performance leans toward higher values, with more practices performing above the mean. Notably, there was no single mode identified in this sample, meaning no individual performance level occurred more than once. These results show that the highest-performing practice (52%) outperformed the median by 27% (1.27 times), while those at the bottom (21%) represent a significant gap in service. For the practices performing below the median, these results highlight a clear opportunity to improve the timing of hospice referrals and ensure vulnerable patients receive the full benefit of palliative services.

Table 1. Performance Scores by Decile

Mean Performance Score by Decile (Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death) - Clinician Level

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Performance Score	35.21%	0.00%	8.41%	16.51%	21.65%	26.60%	33.15%	37.89%	41.77%	46.12%	51.52%	64.55%	77.78%
Number of Entities	153	1	16	16	16	15	15	15	15	15	15	15	1
Number of Persons	10,250	9	1,085	920	1,061	1,180	1,027	1,003	1,159	983	948	874	9

Mean Performance Score by Decile (Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death) - Practice Level

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Performance Score	37.6%	21.0%	21.0%	22.0%	29.0%	30.0%	40.0%	41.0%	45.0%	45.0%	51.0%	52.0%	52.0%
Number of Entities	10	1	1	1	1	1	1	1	1	1	1	1	1
Number of Persons	9,023	458	458	2,155	813	609	894	668	654	655	436	1,681	1,681

2.6 Meaningfulness to Target Population

ASCO's end-of-life quality measures were originally developed in 2003 using a patient-centered methodology to capture outcomes meaningful to those with advanced illness (Earle et al., 2003). This included:

- Focus groups consisting of patients with incurable cancer and family members of deceased patients. These participants identified and vetted potential EOL quality measures to ensure they reflected patient-centered priorities.
- Expert Consensus: A multidisciplinary expert panel applied a modified Delphi approach to rank the importance and meaningfulness of potential measures based on the focus group input. Measures that did not resonate with patient and family values (such as those focused solely on economic efficiency) were excluded.
- Literature searches.

ASCO has continued to integrate the patient and caregiver voice into the current versions of these measures:

- Expert Panel Participation: A family caregiver representative served as a formal member of the 2023-2024 ASCO EOL Expert Panel, providing direct input during the review and updating of the measures.
- May 2025 Public Comment Period: Following the updates, ASCO held a public comment period to ensure the measures remained valuable to stakeholders. Of the respondents, which included a patient representative, a significant majority agreed that the measures effectively differentiate between high- and low-quality care and assess what they intend to

assess (i.e., quality of end-of-life care).

References:

Earle, C. C., Park, E. R., Lai, B., Weeks, J. C., Ayanian, J. Z., & Block, S. (2003). Identifying potential indicators of the quality of end-of-life cancer care from administrative data. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 21(6), 1133-1138. <https://doi.org/10.1200/JCO.2003.03.059>

3.1 Contributions Towards Closing Care Gaps

A recent systematic review and meta-analysis looked at aggressive EOL cancer care among ~2.7 million patients across 129 studies and found that aggressive EOL care is a common global practice (Ma et al., 2024):

- Repeated hospital admissions (>1) in the last 30 days of life: 17.9%.
- Repeated emergency room visits (>1) in the last 30 days of life: 14.8%.
- Intensive care unit (ICU) stays in the last 30 days of life: 14.4%.
- **Hospice enrollment less than 3 days before death: 14.4%.**
- Chemotherapy in the last 14 days of life: 11.6%.

Additionally, of the studies using a composite score, more than half of the patients experienced at least one measure of aggressive care at the end of their lives. The research also showed that patients with hematologic malignancies were significantly more likely to receive aggressive care, including higher rates of late hospice enrollment, ICU stays, and chemotherapy in the last weeks of life, compared to those with solid tumors (Ma et al., 2024).

There is evidence of gaps in care among lower-level studies as well. A retrospective review evaluated 2,844 patients in a multistate, community-based hospital network with stage IV NSCLC and found that only 8 percent of patients were referred for outpatient palliative care (Meggyesy et al., 2022).

CMS launched the Enhancing Oncology Model (EOM) in July 2023. EOM is a voluntary, episode-based model that 44 oncology practices treating patients with high-risk cancer participate in. Per the 2025 Enhancing Oncology Model – First Evaluation Report, only 51.1% of EOM patients who died were admitted to hospice for at least 3 days before their death, indicating much room for improvement on this measure (CMS, 2025).

References:

1. Centers for Medicare & Medicaid Services. (2025). *EOM First Evaluation Main Report*. <https://www.cms.gov/priorities/innovation/data-and-reports/2025/eom-1st-eval-report>
2. Ma, Z., Li, H., Zhang, Y., Zhang, L., Huang, G., Zhang, Y., Shi, L., Liu, W., An, Z., & Guan, X. (2024). Prevalence of aggressive care among patients with cancer near the end of life: a systematic review and meta-analysis. *EClinicalMedicine*, 71, 102561. <https://doi.org/10.1016/j.eclinm.2024.102561>
3. Meggyesy, A. M., Buehler, K. E., Wilshire, C. L., Chiu, S. T., Chang, S.-C., Rayburn, J. R., Gilbert, C. R., & Gorden, J. A. (2022). Utilization of palliative care resource remains low, consuming potentially avoidable hospital admissions in stage IV non-small cell lung cancer: A community-based retrospective review. *Supportive Care in Cancer*, 30(12), 10117-10126. <https://doi.org/10.1007/s00520-022-07364-0>

There are also disparities in hospice utilization and length of stay (LOS) by race/ethnicity. A 2023 original investigation analyzed hospice use among Medicaid-only and dual beneficiaries in the Connecticut Medicaid program who died over a 4-year period. In both populations, Hispanic and non-Hispanic African Americans decedents had significantly lower odds of using hospice compared to non-Hispanic White decedents (OR Medicaid-only = .76 & .77 and OR duals = .89 & .74). The study also found that Hispanic decedents were more likely to have a short hospice stay (defined by the study as 1-7 LOS days per the study) compared to non-Hispanic White decedents (OR Medicaid-only = 2.32 and OR duals = 1.25). (Robison et al.)

Another recent study evaluated hospice utilization among Medicare decedents with advanced cancers and found that non-Hispanic African American beneficiaries had 8.56 percentage points lower hospice enrollment than non-Hispanic White beneficiaries, and Hispanic beneficiaries had 2.62 percentage points lower enrollment than non-Hispanic White beneficiaries. (Xu et al., 2026)

References:

1. Robison J, Shugrue N, Dillon E, et al. Racial and Ethnic Differences in Hospice Use Among Medicaid-Only and Dual-Eligible Decedents. *JAMA Health Forum*. 2023;4(12):e234240. doi:10.1001/jamahealthforum.2023.4240
2. Hu X, Jiang C, Kwon Y, et al. Medicare Plan Switching and Hospice Care Among Decedents With Advanced Cancer. *JAMA Netw Open*. 2026;9(3):e260755. doi:10.1001/jamanetworkopen.2026.0755

4.1a Data Structure and Availability

The measure is designated as a Clinical Quality Measure (CQM), with all underlying data elements fully aligned with USCDI (United States Core Data for Interoperability) and USCDI+ Quality standard definitions. Calculation is performed via digital methodology, utilizing electronic sources where key data elements are captured within defined, structured fields.

4.1b Implementation Costs and Burden

The measure's high level of utilization and successful reporting within the Merit-based Incentive Payment System (MIPS) demonstrate its low administrative burden and overall ease of reporting. By adhering to the national interoperability standards and leveraging existing electronic data fields, the measure ensures high data fidelity and standardized reporting across clinical environments.

4.1c Confidentiality

Data collection for this measure is conducted in strict accordance with HIPAA Privacy and Security Rules. Confidentiality is maintained because the measure utilizes de-identified Electronic Health Record (EHR) data sourced from clinical systems. Direct identifiers are removed or masked prior to the data being made available for measure calculation, ensuring that the analysis remains focused on clinical patterns and outcomes rather than individual patient identities.

To mitigate the risk of re-identification in small patient populations (the "Small N" problem), a minimum threshold of five (5) patients is suggested for performance reporting. This recommended suppression guideline is intended to prevent "deductive disclosure," where an individual's identity could potentially be inferred from a very small data set or outlier results within a specific clinical facility. By suggesting this minimum volume, the measure balances the need for transparent, data-driven reporting with the highest standards of patient privacy.

Finally, confidentiality risks associated with patient surveys are not applicable to this measure, as it relies entirely on clinical data extracted from EHRs with no direct patient interaction or survey-based data collection.

4.3 Feasibility Informed Final Measure

The continued use of the measure reflects a mature, data-driven tool that leverages existing electronic health record capabilities to ensure efficient reporting and reliable performance. This long-standing measure is fully optimized for contemporary clinical environments.

4.4 Proprietary Information

Proprietary measure or components with fees

4.4a Fees, Licensing, or Other Requirements

As the world's leading professional organization for physicians and others engaged in clinical cancer research and cancer patient care, American Society of Clinical Oncology, Inc. ("Society") and its affiliates¹ publishes and presents a wide range of oncologist-approved cancer information,

educational and practice tools, and other content. The ASCO trademarks, including without limitation ASCO®, American Society of Clinical Oncology®, JCO®, Journal of Clinical Oncology®, Cancer.Net™, QOPI®, QOPI Certification Program™, and Conquer Cancer®, are among the most highly respected trademarks in the fields of cancer research, oncology education, patient information, and quality care. This outstanding reputation is due in large part to the contributions of ASCO members and volunteers. Any goodwill or commercial benefit from the use of ASCO content and trademarks will therefore accrue to the Society and its respective affiliates and further their tax-exempt charitable missions. Any use of ASCO content and trademarks that may depreciate their reputation and value will be prohibited.

ASCO does not charge a licensing fee to not-for-profit hospitals, healthcare systems, or practices to use the measure for quality improvement, research or reporting to federal programs. ASCO encourage all of these not-for-profit users to obtain a measure library license so ASCO can:

- Keep users informed about measure updates and/or changes
- Learn from measure users about any implementation challenges to inform future measure updates and/or changes
- Track measure utilization (outside of federal reporting programs) and performance rates

ASCO has adopted the Council of Medical Specialty Society's Code for Interactions with Companies (<https://cmss.org/wp-content/uploads/2026/04/CMSS-Code-for-Interactions-...>), which provides guidance on interactions with for-profit entities that develop produce, market or distribute drugs, devices, services or therapies used to diagnose, treat, monitor, manage, and alleviate health conditions. The Society's Board of Directors has set Licensing Standards of American Society of Clinical Oncology (<https://cdn.bfldr.com/KOIHB2Q3/as/bsrth8mwgbsrpvrst6gxqb/2023-ASCO-Lic...>) to guide all licensing arrangements.

In addition, ASCO has adopted the Council of Medical Specialty Society's Policy on Antitrust Compliance (<https://cmss.org/statements/cmss-policy-on-antitrust-compliance/>), which provided guidance on compliance with all laws applicable to its programs and activities, specifically including federal and state antitrust laws, including guidance to not discuss, communicate, or make announcements about fixing prices, allocating customers or markets, or unreasonably restraining trade.

5.1.1 Data Used for Testing

Testing for this measure was conducted using Electronic Health Record (EHR) data sourced from The US Oncology Network (USON)/McKesson databases. This data provided comprehensive national geographic coverage, spanning urban, suburban, and rural regions. The analysis included a total of 158 physicians and 10 practices identified within the USON network.

5.1.1a Dates of Testing Data

The testing period for both data sources encompassed the timeframe from January 1, 2023, to

December 31, 2024. This two-year window ensures the measure was validated against the most current coding standards and clinical practice patterns, providing a stable and contemporary baseline for analysis.

5.1.2 Differences in Data

There are specific differences in the sample sizes used for various aspects of testing, driven by the clinical sensitivity of the measure and the statistical requirements of the analysis:

Performance Gap and Validity Testing

Threshold: Entities with a minimum of five (5) patients meeting the measure denominator.

Sample Size:

- At the individual clinician level, the analysis included 158 reporting entities (derived from USON/McKesson Electronic Health Record (EHR) data, Jan 1, 2023 – Dec 31, 2024).
- At the practice level, the analysis included 10 reporting entities (derived from USON/McKesson Electronic Health Record (EHR) data, Jan 1, 2023 – Dec 31, 2024).

Rationale: This is an end-of-life hospice utilization measure. Because hospice enrollment is a critical quality indicator in oncology, ASCO determined that "each patient matters" in the assessment of care delivery. A lower threshold of $N \geq 5$ was utilized to prioritize "Visibility over Volatility."

- **Health Equity:** Utilizing a broader inclusion criteria prevents quality "blind spots" in community-based or rural oncology settings where EOL events are significant but may occur less frequently. High thresholds would effectively penalize these practices by making their care invisible to the measure.
- **Clinical Significance:** While smaller denominators inherently have a higher standard error, the clinical priority of ensuring timely hospice access outweighs the statistical risk of "noisy" scores at the individual entity level.

Reliability Testing

Threshold: Entities with a minimum of twelve (12) patients meeting the measure denominator.

Sample Size:

- At the individual clinician level, the analysis included 147 reporting entities (a subset of the EHR dataset described above).
- For practice-level reporting, 10 entities were identified. This group represents the full aggregate of the aforementioned cohort, as all practices met or exceeded the 12-patient minimum threshold.

Rationale: A higher threshold of $N \geq 12$ was applied specifically for reliability testing to maintain psychometric rigor.

- **Signal-to-Noise Ratio:** For a measure's reliability coefficient (Beta) to be stable, there must be enough patient volume to distinguish true clinical variation from random statistical noise.
- **Instrument Validation:** Using these 147 higher-volume entities ensures that the reliability of the "measurement instrument" itself is validated on a stable data set before being applied to the broader clinical population.

Exclusions and Risk Adjustment

No other differences in data sources or timeframes were utilized for exclusions or risk-adjustment testing.

5.1.3 Characteristics of Measured Entities

Performance on this measure was assessed for a cohort of 158 physicians and 10 practices affiliated with the US Oncology Network (USON)/McKesson across the United States.

5.1.4 Characteristics of Units of the Eligible Population

To ensure patient privacy, characteristics of the eligible population were not attributed to specific practices or physicians. We obtained aggregate demographic data from USON for patients who reported gender and race; the demographic profile for the overall sample is detailed in the tables below.

Characteristic	Category	Patient Count (n)	Percentage (%)
Gender (N=9,023)	Male	4,999	55.4%
	Female	4,024	44.6%
Race (N=8,468)	White	7,010	82.8%
	Black or African American	436	5.1%
	Other	305	3.6%
	Asian	149	1.8%
	American Indian or Alaska Native	30	0.4%
	Native Hawaiian or Other Pacific Islander	11	0.1%
	Declined to Specify	520	6.1%
	Unknown	7	0.1%

Note: Race data was available for 93.8% ($n=8,468$) of the total eligible population ($N=9,023$). The

discrepancy reflects instances of missing or undocumented values in the source dataset and does not impact the statistical integrity of the overall analysis.

5.2.1 Level(s) of Reliability Testing Conducted

Person or encounter level (i.e., data element) (e.g., inter-abstractor reliability), Accountable entity level (i.e., measure score) (e.g., signal-to-noise analysis)

5.2.2 Method(s) of Reliability Testing

Firstly, to verify the reliability of the data elements in this measure, a random sample of 105 patients was selected across 8 different test sites. Scoring for each data element was performed by both a measure abstractor and an automated algorithm, with the Kappa statistic used to evaluate the level of agreement between the two methods. The denominator, numerator, denominator exception, and numerator exception data elements were assessed for all 105 patients.

Secondly, an assessment of the measure's reliability was performed through the utilization of signal-to-noise analysis, a method that determines the precision of the actual construct in comparison to the random variation. The signal-to-noise ratio is determined by calculating the ratio of between-unit variance to total variance. This analysis provides valuable insight into the measure's reliability and its ability to produce consistent results by describing how well one can confidently distinguish the performance of one clinician from another.

Based on the hierarchical modeling approach for provider profiling, the following steps were taken:

- **Data Aggregation:** Patient-level data were captured as binary (pass/fail) events and aggregated to the clinician level to determine the numerator and denominator for each physician.
- **Model Selection:** We utilized a Beta-Binomial model, which is the natural fit for estimating the reliability of simple pass/fail rate measures.
- **Variance Partitioning:** The model partitioned the total observed variability in practice scores into two components: between-unit variance (the "signal," or true differences in physician quality) and within-unit variance (the "noise," or random sampling error).
- **Reliability Calculation:** For each clinician, a reliability coefficient (R) was calculated using the ratio of the estimated provider-to-provider variance to the sum of the provider-to-provider variance and the binomial error variance ($p(1-p)/n$).
- **Threshold Application:** The analysis focused on identifying the stability of these scores for physicians meeting a minimum patient count of 12.

5.2.3 Reliability Testing Results

Person or Encounter Level (Data Element) Testing

Percentage of Patients who Died with Cancer Enrolled in Hospice For at Least 3 Days Immediately Before Death

Measure Data Element	Kappa Estimate	Standard Error	95% Confidence Limits	
Denominator	1.0000	0.0000	1.0000	1.0000
Numerator	1.0000	0.0000	1.0000	1.0000
Denominator Exception	1.0000	0.0000	1.0000	1.0000
Numerator Exception	1.0000	0.0000	1.0000	1.0000

Accountable Entity Level (Measure Score) Testing

Reliability was assessed at the clinician level using a beta-binomial signal-to-noise analysis, which partitions total observed variation into true performance differences and random sampling error. Across 147 entities and 8,919 persons, the measure yielded an overall mean reliability of 0.818, significantly exceeding the >0.60 target threshold. Results confirmed that statistical stability scales with patient volume: while the first decile averaged 0.64, the second reached 0.747, further validating the 12-patient minimum for consistently distinguishing performance. Entities in the highest decile achieved a reliability of 0.922, confirming that the measure provides a highly stable performance signal with minimal influence from random noise.

Additionally, reliability was assessed at the practice level using a beta-binomial signal-to-noise analysis, which partitions total observed variation into true performance differences and random sampling error. Across 10 practices and 9,023 persons, the measure yielded an overall mean reliability of 0.974, significantly exceeding the >0.60 target threshold. Results confirmed exceptional statistical stability across all cohorts; while the first decile averaged 0.952, the second reached 0.969, validating that the measure maintains a highly consistent signal even at the observed 436-patient minimum. Practices in the highest decile achieved a reliability of 0.993, confirming the measure provides a near-perfect performance signal with negligible influence from random noise.

5.2.4 Interpretation of Reliability Results

Person or Encounter Level (Data Element) Testing

The inter-rater reliability analysis yielded a Kappa Estimate of 1.0000 across all key data elements, including the numerator and exception logic. This result represents absolute concordance and serves as definitive evidence of the measure’s technical and operational stability.

Such a perfect level of agreement is directly attributable to the long-standing operationalization of these measures. Rather than relying on subjective clinical interpretation or manual abstraction, these measures are built upon highly specific, structured data fields that have been refined over several years of active use. By utilizing standardized coding sets and discrete data elements, the measure eliminates the "noise" typically associated with human error or varying clinical

documentation styles.

Clinician Level Interpretation (Based on 147 entities and 8,919 persons)

The results support a strong inference of reliability, as the mean coefficient of 0.818 indicates that the 'signal' of true performance differences significantly outweighs random sampling error. Because high reliability is essential for confidently distinguishing the performance of one provider from another, these scores demonstrate the measure's suitability for comparative profiling. The decile distribution further supports this inference, as 100% of the sample deciles met or exceeded the >0.60 benchmark. Specifically, reaching a mean reliability of 0.640 in the first decile and 0.747 in the second validates that a 12-patient minimum threshold provides a sufficient sample to mitigate the probability of misclassifying clinicians due to random noise. Collectively, these findings demonstrate that the measure provides a stable, repeatable, and precise assessment of clinician performance.

Practice Level Interpretation (Based on 10 practices and 9,023 persons)

The results support a superior inference of reliability, as the mean coefficient of 0.974 indicates that the 'signal' of true performance differences almost entirely outweighs random sampling error. Because high reliability is essential for confidently distinguishing the performance of one practice from another, these scores demonstrate the measure's exceptional suitability for comparative profiling. The decile distribution further supports this inference, as 100% of the sample deciles vastly exceeded the >0.60 benchmark, with every decile scoring above 0.95. Specifically, reaching a mean reliability of 0.952 in the first decile validates that the measure provides a near-perfect assessment with negligible influence from random noise at this scale. Collectively, these findings demonstrate that the measure provides a highly stable, repeatable, and precise assessment of practice-level performance.

Table 2a. Accountable Entity Level Reliability Testing Results by Denominator, Target Population Size

Reliability and Performance Score by Denominator Decile: Percentage of Patients who Died with Cancer Enrolled in Hospice for At Least 3 Days Immediately Before Death (Registry version), Clinician Level, Jan 2023 - Dec 2024

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	0.818	0.533	0.64	0.747	0.764	0.801	0.836	0.84	0.856	0.893	0.888	0.922	0.973
Mean													
Performance Score	29.9%	26.0%	27.0%	28.7%	25.9%	29.3%	32.7%	30.1%	29.9%	29.9%	33.0%	32.2%	44.0%
Number of Entities	147	3	15	15	14	15	15	14	15	14	15	15	1

Number of Persons	8,919	12	270	414	486	652	819	866	1,067	1,163	1,380	1,802	193
-------------------	-------	----	-----	-----	-----	-----	-----	-----	-------	-------	-------	-------	-----

Reliability and Performance Score by Denominator Decile: Percentage of Patients who Died with Cancer Enrolled in Hospice for At Least 3 Days Immediately Before Death (Registry version), Practice Level, Jan 2023 - Dec 2024

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	0.974	0.952	0.952	0.969	0.971	0.968	0.968	0.969	0.978	0.977	0.987	0.993	0.993
Mean Perf. Score	37.6%	51.1%	51.1%	21.0%	29.6%	45.0%	44.9%	41.0%	28.9%	40.5%	52.0%	22.5%	22.5%
Num. of Entities	10	1	1	1	1	1	1	1	1	1	1	1	1
Num. of Persons	9,023	436	436	458	609	654	655	668	813	894	1,681	2,155	2,155

Table 2b. Accountable Entity Level Reliability Testing Results by Reliability Score

Reliability by Reliability Score: Percentage of Patients who Died with Cancer Enrolled in Hospice for At Least 3 Days Immediately Before Death (Registry version), Clinician Level, Jan 2023 - Dec 2024

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	0.818	0.49	0.619	0.722	0.776	0.813	0.833	0.847	0.865	0.882	0.9	0.93	0.973

Reliability by Reliability Score: Percentage of Patients who Died with Cancer Enrolled in Hospice for At Least 3 Days Immediately Before Death (Registry version), Practice Level, Jan 2023 - Dec 2024

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	0.974	0.952	0.952	0.968	0.968	0.969	0.969	0.971	0.977	0.978	0.987	0.993	0.993

5.3.1 Level(s) of Validity Testing Conducted

Accountable entity level (i.e., measure score) (e.g., criterion validity)

5.3.2 Type of Accountable Entity Level Validity Testing Conducted

Empirical validity testing at the accountable entity-level (e.g., criterion validity, construct validity, known groups analysis)

5.3.3 Method(s) of Validity Testing

We evaluated the construct validity of three oncology performance measures focused on end-of-life care at both the physician and practice levels. By examining the Pearson correlation coefficients and their statistical significance, we determined whether the empirical relationships reliably align with expected clinical logic and theoretical frameworks regarding end-of-life care pathways.

Measures Evaluated

1. **Hospice $\geq$ 3 Days:** Percentage of patients who died with cancer enrolled in hospice for at least 3 days immediately before death.
2. **Therapy Last 14 Days:** Percentage of patients who died with cancer receiving systemic cancer-directed therapy in the last 14 days of life.
3. **Therapy Last 30 Days:** Percentage of patients who died with cancer receiving systemic cancer-directed therapy in the last 30 days of life.

Physician-Level Analysis (N = 158)

Hypothesized Relationships

At the individual provider level, we expect a convergent (positive) relationship between the two aggressive systemic therapy measures, and a divergent/inverse (negative) relationship between meaningful hospice enrollment and end-of-life systemic therapy.

Practice-Level Analysis (N = 10)

Hypothesized Relationships

Consistent with the physician-level analysis, we expect practices with a high propensity to administer late systemic therapy to show strong positive correlations between the two therapy timelines, and strong negative correlations regarding timely hospice enrollment, as meaningful hospice care requires the cessation of curative therapies.

5.3.4 Validity Testing Results

Physician-Level Analysis (N = 158)

Empirical Findings & Significance

- **Evidence of Convergent Validity (Therapy vs. Therapy)**
 - **Result:** A strong, highly significant positive correlation ($r = 0.6669$, $p < 0.0001$) exists between Therapy Last 14 Days and Therapy Last 30 Days.
 - **Interpretation:** Individual physicians who tend to prescribe systemic therapy within

the last month of life are also highly likely to prescribe it within the final two weeks of life. The incredibly low p-value confirms with near absolute certainty that these two measures are capturing the same underlying physician behavioral construct regarding aggressive end-of-life treatment.

- **Evidence of Divergent/Inverse Validity (Hospice vs. Therapy)**

- **Result:** Statistically significant negative correlations were observed between Hospice ≥ 3 Days and both systemic therapy measures ($r = -0.2478$, $p = 0.0017$ for 14 Days; $r = -0.1950$, $p = 0.0141$ for 30 Days).
- **Interpretation:** The relationships are highly statistically significant due to the large sample size. This confirms the clinical trade-off holds true at the provider level: physicians with a higher tendency to utilize late-stage systemic treatments systematically display lower rates of effectively transitioning patients to hospice care for at least 3 days prior to death.

Practice-Level Analysis (N = 10)

Empirical Findings & Significance

- **Evidence of Convergent Validity (Therapy vs. Therapy)**

- **Result:** A strong, highly significant positive correlation ($r = 0.7998$, $p = 0.0055$) was observed between Therapy Last 14 Days and Therapy Last 30 Days.
- **Interpretation:** As expected, practices that frequently administer systemic therapy in the final month of life also frequently administer it in the final two weeks. The high statistical significance indicates there is less than a 1% probability that this strong alignment occurred by random chance.

- **Evidence of Divergent/Inverse Validity (Hospice vs. Therapy)**

- **Result:** Strong, significant negative correlations were observed between the Hospice ≥ 3 Days measure and both therapy measures ($r = -0.8045$, $p = 0.0050$ for Therapy Last 30 Days; $r = -0.6446$, $p = 0.0442$ for Therapy Last 14 Days).
- **Interpretation:** This inverse relationship provides excellent, statistically backed validation. It demonstrates that the measures successfully capture the clinical trade-off between palliative/hospice care and aggressive systemic treatment at the aggregate organizational level. Practices with higher utilization of end-of-life systemic therapy are demonstrably and non-randomly delaying or underutilizing hospice care.

5.3.4a Attach Additional Validity Testing Results

[Scatterplots-and-Correlation-Matrices.pdf](#)

5.3.5 Interpretation of Validity Results

Physician-Level Analysis (N = 158)

The analysis of 158 individual providers strongly supports the construct validity of these measures. The empirical data reliably reflects expected clinical pathways, demonstrating that timely hospice enrollment and late-stage systemic therapy act as competing, inverse clinical priorities at the physician level.

Practice-Level Analysis (N = 10)

The correlation data provides robust, statistically significant evidence for the construct validity of these three performance measures. Even with a smaller sample size of 10 practices, the strength of the clinical relationships drives highly significant results.

- **Overall Summary**

Across both individual physician behaviors (N=158) and aggregated practice patterns (N=10), these three measures interact exactly as predicted by established clinical pathways. The empirical data mathematically and significantly reflects the reality that aggressive systemic treatment and timely hospice enrollment are competing clinical events. Stakeholders can be highly confident that these measures are accurately and reliably capturing valid dimensions of end-of-life oncology care quality across different levels of attribution.

5.4.1 Methods Used to Address Risk Factors

No risk adjustment or stratification

5.4.1b Rationale For No Adjustment or Stratification

The decision to maintain unadjusted performance scores for these end-of-life measures is rooted in the philosophy that quality palliative care and clinical stewardship represent universal standards that should not fluctuate based on patient complexity. Unlike outcomes heavily influenced by biological variance, metrics such as systemic therapy administration and ICU utilization reflect direct clinical decision-making and provider agency; therefore, risk adjustment could inadvertently "normalize" aggressive care by suggesting that medical complexity justifies a departure from palliative best practices. Furthermore, because these measures are calculated using a denominator of patients who have already deceased, the cohort is inherently characterized by high clinical risk, making additional adjustment statistically redundant and potentially misleading. By prioritizing unadjusted data, ASCO maintains a transparent view of the raw clinical reality, ensuring that gaps in service and health inequities remain visible rather than being masked by statistical smoothing. Ultimately, this approach upholds the principle that every patient, regardless of their diagnosis or comorbidities, deserves a timely transition to hospice and a coordinated, comfort-focused end-of-life experience.

6.1.1 Current Status

In use

6.1.2 Current or Planned Use(s)

Payment Program, Professional Certification or Recognition Program, Other

6.1.3 Program Details

Name of the program and sponsor

Merit-based Incentive Payment System (MIPS) reporting program, Center for Medicare and Medicaid Services (CMS)

URL of the program

<https://qpp.cms.gov/mips/explore-measures>

Purpose of the program

MIPS takes a comprehensive approach to payment by basing consideration of quality on a set of evidence-based measures that were primarily developed by clinicians, thus encouraging improvement in clinical practice and supporting advances in technology that allow for easy exchange of information.

Geographic area and percentage of accountable entities and patients included

MIPS eligible providers may earn performance-based payment adjustments for the services provided to Medicare patients in the USA. For the 2023 MIPS reporting year, 3,035 individual clinicians reported on MIPS 457. Of these, 3,010 practice in urban or suburban locations, while 25 practice in rural locations. The Northeast has the highest overall volume of reporting clinicians (1,846), led by New York (NY) with 1,314 practitioners and New Jersey (NJ) with 507. Following the Northeast in total volume are the West (837), the South (289), and the Midwest (63). Notably, the Midwest has the highest number of clinicians practicing at rural locations with 19, a concentration entirely driven by Indiana (19).

Applicable level of analysis and care setting

Individual Clinician/Group Level; Registry Data Source; Outpatient Services/Ambulatory Care Setting

6.1.4 Attributes for Accountability Use

1. Target Populations

The measure is applicable to adult patients (aged 18 and older) with a confirmed diagnosis of cancer.

2. Accountable Entities

Accountability is attributed at the level of the individual clinician or physician.

- Attribution Logic: Patients are attributed to the entity that provides the plurality of oncology-related services or manages the "episode of care" (e.g., the six-month period following the initiation of chemotherapy).
- Responsibility: The entity is held accountable for the patient's clinical outcomes, resource utilization (such as avoidable ER visits), and adherence to evidence-based pathways.

3. Care Settings

The primary care setting is the Outpatient Oncology Clinic, including:

- Community-based oncology practices.

- Hospital Outpatient Departments (HOPDs).
- Infusion Centers.

Note on Care Settings: *Clinical oncologists provide care within the outpatient setting; however, this measure set monitors related clinical outcomes across multiple sites of service. Evaluated events include, but are not limited to, inpatient/outpatient hospital infusions, ICU stays, and emergency department encounters stemming from complications of the outpatient treatment.*

6.2.1 Actions of Measured Entities to Improve Performance

There is evidence that there are interventions that can be put in place to increase time spent in hospice, therefore improving the performance on the measure score:

- In general, patients with weeks to days to live (eg, dying patients) and comfort-oriented goals should discontinue all treatments not directly contributing to patient comfort. Intensive palliative care focusing on symptom management should be provided in addition to preparation for the dying process. Referral for hospice care should be placed, if not already done. (Category 2A) (NCCN, 2026)
- Clinicians should refer patients with advanced solid tumors and hematologic malignancies to specialized interdisciplinary palliative care teams that provide inpatient and outpatient care early in the course of disease, alongside active treatment of their cancer (Moderate, Strong) (Sanders et al., 2024)
- Palliative care for patients with advanced cancer should be delivered through interdisciplinary palliative care teams, with consultation available in both outpatient and inpatient settings (Intermediate, Moderate) (Sanders et al., 2024)
- Patients with advanced cancer should receive palliative care services, which may include a referral to a palliative care provider. Essential components of palliative care include (Intermediate, Moderate) (Sanders et al., 2024)
 - Rapport and relationship building with patient and family caregivers
 - Symptom, distress, and functional status management (eg, pain, dyspnea, fatigue, sleep disturbance, mood, nausea, or constipation)
 - Exploration of understanding and education about illness and prognosis
 - Clarification of treatment goals
 - Assessment and support of coping and spiritual needs
 - Assistance with medical decision making
 - Coordination with other care providers
 - Provision of referrals to other care providers as indicated
- Patients with months to weeks to live should be provided with guidance regarding the anticipated course of the disease. Physicians should reassess prognostic awareness and goals of therapy. As functional status worsens, these patients may become more concerned about the side effects of cancer-directed treatment and consider focusing their care on maintaining quality of life. The option of discontinuing anticancer treatment aligned with goals of care and initiating goal-directed supportive care should be discussed. (Category 2A) (NCCN, 2026)

The below outlines the difficulty of the actions described above and how measures entities can overcome those difficulties:

Action	Difficulty Level	Why it is Difficult	How to Overcome
Early Referral	Moderate	Shortage of specialist palliative care clinicians and the stigma that palliative care means "giving up." Clinician reluctance to initiate "hospice" talk, often due to a desire to pursue further curative lines of therapy.	In addition to physicians, oncology nurses can be positioned to provide primary palliative care and provide increased advance care planning with patients with advanced cancer (NCCN, 2026). The <NCCN> Panel emphasizes the importance of initiating or continuing advance care planning conversations and systematically reviewing advance care plans to ensure ongoing accuracy as illness or situation evolves. To avoid demeaning the value of end of life care, palliative and/or hospice care should not be framed as "giving up" but instead refocusing the care plan to achieve a better quality of life (NCCN, 2026) Frame hospice as an "extra layer of support" that maximizes quality of life (QOL) alongside or following treatment.
ACP Documentation	High	These conversations are time-intensive and clinicians often lack training in high-stakes communication.	Embed ACP templates in the EHR. Use a "primary care/oncology" shared model where social workers or nurses lead initial goals of care discussions.
Prognostication Accuracy	High	Difficulty accurately predicting a <6 month life expectancy, particularly in cancers with fluctuating trajectories.	Use prognostic tools and multidisciplinary team reviews (doctors, nurses, social workers) to assess decline more holistically.
Patient/Family Resistance	High	Misperception that hospice is "giving up" or only for the actively dying.	Provide education on the broad palliative services covered, including symptom management and bereavement support for the family.

References:

1. National Comprehensive Cancer Network. (2026). *NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Palliative Care* (Version 1.2026). <https://www.nccn.org/guidelines/guidelines-detail?id=1454>
2. Sanders, J. J., Temin, S., Ghoshal, A., Alesi, E. R., Ali, Z. V., Chauhan, C., Cleary, J. F., Epstein, A. S., Firn, J. I., Jones, J. A., Litzow, M. R., Lundquist, D. M., Mardones, M. A., Nipp, R. D., Rabow, M. W., Rosa, W. E., Zimmermann, C., & Ferrell, B. R. (2024). Palliative Care for Patients with Cancer: ASCO guideline Update. *Journal of Clinical Oncology*, 42(19), 2336–2357. <https://doi.org/10.1200/JCO.24.00542>

6.2.2 Feedback on Measure Performance

ASCO has not received any feedback on measure performance or implementation from measured entities within MIPS. The updated measure will be used beginning with CY 2027 within the MIPS program. ASCO's EOL Measures TEP did discuss that there is extensive literature showing that hematology patients are much less likely to receive hospice care or use it meaningfully, i.e., for an appropriate amount of time. In speaking with referring physicians, there is a clear indication that transfusions are a barrier to hospice care. Though there is not a ban on transfusions, there is a per diem that the hospice benefit will pay to hospice agencies and some hospices will refuse care for patients seeking transfusion support. This leads to those patients not enrolling in hospice or enrolling late. However, the panel wanted to keep hematology patients in this measure to track performance. ASCO also received feedback from its May 2025 public comment to increase the number of days to 2 weeks or 30 days for this hospice measure; however the TEP did not want to make too many changes at once so opted to retain the three-day timeframe.

6.2.3 Consideration of Measure Feedback

See above in 6.2.2.

6.2.4 Progress on Improvement

As this updated measure now looks at both time spent in and admittance to hospice among patients who died with cancer, ASCO does not have data on performance trends from MIPS reporting entities at this time. Changes to the denominator should show an increased gap in care, since the original measure looked only at time spent in hospice among deceased cancer patients admitted to hospice, and this updated measure looks at admittance to AND time spent in hospice, among patients with cancer who died. Therefore MIPS benchmarking will be affected, but otherwise there are no unintended consequences ASCO is aware of.

6.2.5 Unexpected Findings

As part of its May 2025 call for public comments on ASCO's updated EOL measures, ASCO did

receive feedback from respondents to add more exclusions and exceptions for treatment intent, clinical trial enrollment, patient preferences, and barriers to access palliative care and hospice. ASCO's End of Life Measures Technical Expert Panel emphasizes that performance is not expected to be perfect on these quality measures. A margin of error should be expected to account for the above.

7.1 Supplemental Attachment

[CBE-0216_RegistrySpec.pdf](#)

Developer POC email

neha.agrawal@asco.org

Measure Developer POC

Neha Agrawal
ASCO
Alexandria, VA
United States

The measure developer is different from the measure steward

No

Steward Address

Neha Agrawal
Alexandria, VA
United States

Steward Organization

American Society of Clinical Oncology (ASCO)

Steward Organization URL

<https://www.asco.org>

Steward POC email

neha.agrawal@asco.org