

Prevention and Population Health, Fall 2020 Cycle: CDP Report

**DRAFT REPORT FOR CSAC REVIEW
JUNE 29, 2021**

This report is funded by the Centers for Medicare & Medicaid Services
under contract HHSM-500-2017-00060I Task Order HHSM-500-T0001.

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Executive Summary

Traditionally, medical care has been the primary focus of efforts to improve the health and well-being of individuals and populations. As a result, nearly all national health expenditures have been attributed to healthcare services for the treatment of injury, illness, and disease. However, medical care has a relatively small influence on health outcomes when compared to interventions that address smoking, lower educational attainment, poverty, poor diet, and physical environmental hazards (e.g., unsafe housing and polluted air).¹ There is growing recognition of the role of social determinants of health (SDOH) or social risks in influencing health outcomes. Maintaining and improving the health and well-being of individuals and populations will require a multidisciplinary, multifactorial approach to addressing the effects of SDOH.

Performance measures are needed to assess improvements in population health, as well as the extent to which healthcare stakeholders are using evidence-based strategies (e.g., prevention programs, health screenings, and community needs assessments). To support this effort, the National Quality Forum (NQF) endorses and maintains performance measures related to prevention and population health through a multistakeholder Consensus Development Process (CDP). The purpose of this project is to review Prevention and Population Health measures submitted for endorsement or undergoing endorsement maintenance during the fall 2020 cycle.

NQF's Prevention and Population Health portfolio of measures includes measures for health-related behaviors to promote healthy living; community-level indicators of health and disease; social, economic, and environmental determinants of health; primary prevention and/or screening; and oral health.

For this project, the Prevention and Population Health Standing Committee evaluated one composite electronic clinical quality measure (eCQM) undergoing maintenance review against NQF's standard evaluation criteria.

The Standing Committee reached consensus on the following measure:

- **NQF #3592e:** Global Malnutrition Composite Score (Academy of Nutrition and Dietetics)

A brief summary of the measure currently under review are included in the body of the report; a detailed summary of the Standing Committee's discussion and ratings of the criteria for the measure is in [Appendix A](#).

Introduction

The United States (U.S.) continues to lag behind other nations in key population health indicators, such as infant mortality, obesity, and life expectancy, despite spending more on healthcare than any other nation in the world.² Population health describes the “health outcomes of a group of individuals, including the distribution of such outcomes within the group.”³ Both medical care and SDOH influence health outcomes. SDOH are the conditions or factors within the places where people live, learn, work, play, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.⁴ Specific SDOH factors may include availability of safe housing and local food markets, access to healthcare services, and culture. As one of the five overarching goals for the decade, *Healthy People 2030* highlights the importance of addressing SDOH by including “social, physical, and economic environments that promote attaining the full potential for health and well-being for all.”⁵ Nearly 60 percent of deaths in the U.S. have been attributed to SDOH,⁶ yet less than 5 percent of national health expenditures have been attributed to prevention services.⁷ To further address the population-based needs, healthcare systems are increasingly expanding their roles in partnering with patients and communities to better understand and address SDOH.

Performance measurement is a method of assessing the success of strategies used by healthcare stakeholders to improve outcomes. For prevention and population health, strengthening performance involves joint efforts from communities, public health entities, and other non-healthcare stakeholders (e.g., education, transportation, and employment) to influence health outcomes. Further, by developing the NQF Prevention and Population Health portfolio with high volume, high suffering, and high-cost prevention of chronic disease measures, population-based interventions can reduce often preventable morbidity and premature mortality for all U.S. populations. To support this goal, NQF maintains a portfolio of measures endorsed through a multistakeholder CDP and has developed best practices for prevention and population health. The NQF Prevention and Population Health portfolio includes measures that assess the promotion of healthy behaviors, community-level indicators of health, oral health, and primary prevention strategies. For example, NQF has endorsed several measures related to immunizations and preventive health screenings that are widely used in public reporting and accountability programs.

This project seeks to identify and endorse measures that can be used to assess prevention and population health in both healthcare and community settings. It also focuses on the assessment of disparities in health outcomes. The measure reviewed during the fall 2020 cycle targets malnutrition screening, assessment, diagnosis, and care planning needs for patients ages 65 and older who are hospitalized. This measure promotes population health, shorter lengths of stay (LOS), and lower risk of readmission, and reduces healthcare expenditures over an individual’s lifetime.

NQF Portfolio of Performance Measures for Prevention and Population Health Conditions

The Prevention and Population Health Standing Committee ([Appendix C](#)) oversees NQF’s portfolio of Prevention and Population Health measures ([Appendix B](#)), which includes measures for immunization,

oral health, and cancer screening. This portfolio contains 33 measures: 21 process measures, 11 outcome and resource use measures, and one composite measure (see table below).

Table 1. NQF Prevention and Population Health Portfolio of Measures

Type	Process	Outcome/Resource Use	Composite
Insurance Coverage	0	1	0
Immunization	10	0	1
Pediatric Dentistry	4	1	0
Weight/BMI	1	0	0
Diabetes	0	1	0
Admissions Rates	0	7	0
Cancer Screening	3	0	0
Cardiovascular/Pulmonary	0	1	0
Well-Child Visits	2	0	0
Colonoscopy	1	0	0
Total	21	11	1

Additional measures related to prevention and population health have been assigned to other portfolios. These include various diabetes assessment and screening measures for severe mental illness (SMI) (Behavioral Health and Substance Use), HIV viral load (Primary Care and Chronic Illness), angiotensin-converting enzyme inhibitor/angiotensin II receptor blockers (ACEI/ARB) medication measures (Cardiovascular), asthma admission rates (All-Cause Admissions and Readmissions), and total cost of care and total resource population-based measures (Cost and Efficiency).

Prevention and Population Health Measure Evaluation

On February 17-18, 2021, the Prevention and Population Health Standing Committee evaluated one new measure against NQF's [standard measure evaluation criteria](#).

Table 2. Prevention and Population Health Measure Evaluation Summary

Status	Maintenance	New	Total
Measures under review	0	1	1
Measures recommended for endorsement	0	1	1

Comments Received Prior to Standing Committee Evaluation

NQF accepts comments on endorsed measures on an ongoing basis through the [Quality Positioning System \(QPS\)](#). In addition, NQF accepts comments for a continuous 16-week period during each evaluation cycle via an online tool located on the project webpage. For this evaluation cycle, the commenting period opened on December 23, 2020, and closed on April 30, 2021. No comments were

submitted and shared with the Standing Committee prior to the measure evaluation web meetings ([Appendix F](#)).

Comments Received After Standing Committee Evaluation

The continuous 16-week public commenting period with NQF member support closed on April 30, 2021. Following the Standing Committee's evaluation of the measures under review, NQF received 18 comments from 15 non-member organizations and two member organizations pertaining to the measure under review. NQF also received a measure clarification comment from the measure developer. All comments for the measure under review are summarized in Appendix A.

Throughout the 16-week continuous public commenting period, NQF members had the opportunity to express their support ("support" or "do not support") for the measure submitted for endorsement consideration to inform the Standing Committee's recommendations. One NQF member provided their expression of support.

Overarching Issues

During the Standing Committee's measure discussion, one overarching issue emerged that factored into the Standing Committee's ratings and recommendations.

Disparities Data

The Standing Committee emphasized the importance of providing disparities information for Prevention and Population Health measure submissions to discern meaningful differences in performance among and between groups. Of particular concern is a lack of disparities performance data for process measures in which the evidence demonstrates the outcome disparities relate to the process measure. Specifically, the Standing Committee noted that collecting SDOH performance data should permit analysis of disparities and should be considered a submission requirement when identified. The Standing Committee viewed the lack of such an approach as a lost opportunity to use measurement to reduce inequities in healthcare access, quality, and delivery. The Standing Committee also noted that a measure may appear "topped out", yet performance gaps might exist in the underlying disparities data. Thus, measure disparities may be masked in seemingly good performance, meaning continued endorsement would be appropriate. Without the analysis of SDOH data, instances of disparities may not be detected.

Summary of Measure Evaluation

The following brief summaries of the measure evaluation highlight the major issues that the Standing Committee considered. Details of the Standing Committee's discussion and ratings of the criteria for each measure are included in [Appendix A](#).

#3592e Global Malnutrition Composite Score (Academy of Nutrition and Dietetics): Recommended

Description: This electronically-reported measure (eCQM) is a composite measure of optimal malnutrition care focuses on adults 65 years and older admitted to inpatient service who received care appropriate to their level of malnutrition risk and/or malnutrition diagnosis if properly identified. Best practices for malnutrition care recommend adult inpatients to be screened for malnutrition risk, assessed to confirm findings of malnutrition if found at-risk, and have the proper severity of

malnutrition indicated along with a corresponding nutrition care plan that addresses the respective severity of malnutrition.

The malnutrition composite measure includes four component measures which are first scored separately. The overall composite score is derived from averaging the individual performance scores.

1. Screening for malnutrition risk at admission.
2. Completing a nutrition assessment for patients who screened for risk of malnutrition.
3. Appropriate documentation of malnutrition diagnosis in the patient's medical record if indicated by the assessment findings.
4. Development of a nutrition care plan for malnourished patients including the recommended treatment plan.

These four component measures represent the key processes of care and generated markers of malnutrition associated with the risk identification, diagnosis, and treatment of malnutrition in older hospitalized adults as supported by clinical guidelines.; **Measure Type:** Composite; **Level of Analysis:** Facility; **Setting of Care:** Inpatient/Hospital; **Data Source:** Electronic Health Records

The Standing Committee did not reach consensus on performance gap, a must-pass criterion. The measure developer provided a measure overview, including a history and context for development of the eCQM composite. The four composite components were initially submitted for endorsement as individual measures in the 2015-2017 Health and Well-Being Project. Individually, these measures did not pass endorsement based on evidence, provider burden concern, timing of malnutrition screening and assessment, and the availability of needed data elements to report the eCQMs. The 2015-2017 Health and Well-Being Standing Committee recommended combining individual measures or all measures into a composite as evidence and empirical gaps were shown, as well as a measure gap in the NQF portfolio. The 2016 NQF Measure Applications Partnership (MAP) also reviewed the individual measures for the Hospital Inpatient Quality Reporting (Hospital IQR) Program and recommended combining the four measures into a composite.

The Standing Committee gave the measure a moderate rating for evidence. The Standing Committee considered the evidence and the composite Malnutrition Care Workflow framework, both of which depict the interventions completed by a licensed and multidisciplinary care team of nurses, dieticians, and independent providers. This framework outlines each component of the composite, including the malnutrition risk screening, assessment, diagnosis, care plan development, intervention implementation, monitoring, evaluating, and discharge planning. The evidence links the framework steps to decreased hospital length of stay (LOS) and 30-day readmissions. The Standing Committee members agreed malnutrition is a significant contributor to infections and pressure ulcers requiring treatment, especially for patients transferred to other care facilities, such as an inpatient rehab. The Standing Committee held a robust discussion of the evidence with most members supporting the presented evidence and topic area importance that assigns accountability to the hospital team. Some Standing Committee members questioned the lack of validated and standardized screening and assessment tools specified in the first two components. Developers stated that objective, validated protocols are readily captured in structured electronic health record (EHR) data fields, such as body

mass index (BMI), dietary history, recent weight loss, illness severity, laboratory values, and age. Other Standing Committee members stated the evidence did not link to patient complications nor demonstrate benefits for mortality, disease progression, and other hospital complications. After a lengthy discussion, the Standing Committee gave a moderate rating for evidence.

The Standing Committee did not reach consensus for performance gap. The extensive evidence and empirical data demonstrated performance gaps in the four component measures and the composite. There was wide acceptance for the provided literature-based and empirical evidence demonstrating disparities in malnutrition risk and performance gaps for component measures in select populations. Populations at risk for malnutrition that were not specified or stratified in the measure included age (including patients less than 65 years), race, ethnicity, and geography. The Standing Committee sought additional facility-based performance data based on geographic differences (e.g., urban or rural), race, ethnicity, age, and sex, specifically as the evidence shows African American and Hispanic communities are at higher risks for malnutrition. After a robust discussion on performance gaps and the ability to discern differences within and between populations, many Standing Committee members stated they wanted to review additional performance data for patients under the age of 65 and all patients by race, ethnicity, sex, and geography. The Standing Committee did not reach consensus for performance gap, a must-pass criterion. If at any point during a measure evaluation a must-pass criterion does not reach consensus, as occurred during the February 17 and 18, 2021 measure evaluation web meeting, the Standing Committee continues reviewing and voting on all remaining criteria, unless another must-pass criterion does not pass. NQF staff guided developers on submitting the requested data for the Standing Committee review's, discussion, and revote of the criterion at the fall 2020 Standing Committee post-comment web meeting on June 3, 2021. During that time, the Standing Committee voted on the overall suitability for endorsement.

The Standing Committee gave the measure a moderate rating for quality construct, rationale, and the aggregation and weighting of the composite. The composite calculation averages the four component rates, requiring a minimum of three reported component measures for numerator inclusion. Based on the extensive Standing Committee evidence and performance gap discussions, including the Malnutrition Care Workflow framework, no further Standing Committee member comments were provided for the composite quality construct and the Standing Committee gave a moderate rating for the quality construct, rationale, and the aggregation and weighting of the composite.

The Scientific Methods Panel (SMP) and the Standing Committee gave the measure a moderate rating for reliability. This composite eCQM is identified as a complex measure as defined by NQF's measure evaluation guidance, which requires a review scientific acceptability (i.e., reliability, validity, and composite construction) by the SMP prior to the Standing Committee's evaluation. The SMP web meeting and measure review occurred on October 28 and 29, 2020. Most SMP members were in favor of the testing methods and results. To further improve reliability, some SMP members recommended adding minimum case thresholds and a requirement to report all four components to assess performance. Others found that the performance accountability was appropriately assigned to the hospital or facility level and further noted that performance benefits could be demonstrated across care settings. The SMP gave the measure a moderate rating for reliability. An overview of the SMP's review can be found in the SMP's [meeting summary](#). The Standing Committee voted not to accept the SMP's

moderate reliability rating; therefore, the Standing Committee discussed the measure reliability in detail. The Standing Committee questioned the absence of validated screening and assessment tools in the first two components, as recommended by the evidence. The developer stated testing was conducted in facilities using validated screening tools and that the multidisciplinary composite framework creates “fillers” for each step in the process to identify patients when other framework steps are lagging. Some Standing Committee members discussed the composite’s effect in relation to factors outside the hospital’s control that increase the risk of hospitalization, LOS, and readmissions. SDOH or social risk barriers that affect malnutrition include food insecurity, language and financial barriers, insurance denials, homelessness, or other barriers identified in malnutrition care planning. The developer noted that inpatient care planning attempts to identify SDOH in preparation for care needs after hospitalization. Furthermore, by analyzing population needs, post-discharge and community-based services and interventions may be enhanced from the health system perspective. Having no more comments, the Standing Committee members voted in favor of moderate reliability for the measure.

The SMP and Standing Committee gave the measure a moderate rating for validity. During the SMP’s review, some concerns were raised in identifying high versus low performers against the overall average. Some SMP members noted the limited details on missing data, the effects of non-reported components on overall composite performance, and the absence of risk adjustment and stratification justification. Measure score validity testing of the composite was generally noted as appropriate with improved validity by adding components along with standard predictors of malnutrition, such as age, diagnoses, and illness severity to 30-day readmission and LOS. Others questioned the inversed direction of LOS and measure performance and other risk factors affecting LOS and 30-day readmission, such as SDOH. The data element validity testing results were generally acceptable and deemed appropriate. The Standing Committee voted not to accept the SMP’s moderate validity rating; therefore, the Standing Committee discussed the measure validity in detail. The Standing Committee asked developers whether they tested the correlation of care plan development to the LOS and 30-day readmission and whether validity testing in hospitals where the components are implemented may bias the findings. They also asked if outcomes data supporting discharge to home versus skilled nursing facilities were available for patients with implemented care plans to capture hospital-based interventions on the health system. The developers stated that wide composite implementation in non-tested hospitals should reduce bias concern. Standing Committee members asked whether the four individual components were tested to support each other and whether the success of one component contributes to the success of other components. Developers described that the composite mirroring the framework is intended to aid overall performance as demonstrated in the item to score correlation, results, and analyses. After a robust discussion, the Standing Committee voted moderate for validity. Similar to the SMP’s discussion, the Standing Committee accepted the data element validity testing methods and results.

The SMP and Standing Committee gave the composite construction a moderate rating. The SMP members generally favored the composite construction approach, specifically the inclusion of appropriate process-related components to the provided framework. Some SMP members wanted additional details on the equal component weighting and whether nominal (i.e., qualitative) rather than interval (i.e., quantitative) level data is appropriate for reliability and validity averaging. The Standing Committee did not accept the SMP’s moderate vote for composite construction. No further comments

were offered by the Standing Committee members who gave a moderate rating for the composite construction.

For feasibility, the Standing Committee noted that the composite's required eCQM data elements are readily captured in an EHR and no additional discussion on feasibility was held before the vote. This criterion received a moderate rating. The Standing Committee discussed use and usability simultaneously. One Standing Committee member asked whether measure component effects were studied with regard to the implementation of comprehensive care processes in hospitals providing "meaningful" interventions versus numerator-targeted care. The developer clarified that the component clinical actions are performed by licensed clinical professionals and that at least three components are required for denominator inclusion to reduce artificial performance inflation. Another Standing Committee member questioned the component performance in instances of staff shortages for licensed nutritionists and the overall composite performance to community malnutrition. The Standing Committee members stated that analyses of measure implementation are needed to fill applicable staffing gaps, and the composite supports the importance of community-based nutrition programs. The Standing Committee voted to pass the composite for use and usability. No related or competing measures were identified for Standing Committee to review.

The Standing Committee's evaluation and voting ended with use and usability. The vote on overall suitability for endorsement was postponed due to the lack of consensus for the performance gap criteria. NQF staff shared with the Standing Committee the next steps, which included reviewing the performance gap criteria with the developer to submit additional health disparities information for the Standing Committee to review. The Standing Committee reviewed this additional information and re-vote on this criterion during the post-comment web meeting on June 3, 2021.

During the post-comment meeting, the Standing Committee discussed their previous concerns regarding the performance gap criterion and reviewed the additional health disparities information provided by the measure developers. The developers provided performance for the overall composite, and the individual components by all adult populations, 65 years and older, and 18 years and older stratified by patient race, ethnicity, sex, and urban/rural designations. Overall performance for younger patients was lower than older patients, and White and American Indian/Alaska Natives patients performed generally lower than all other races and ethnicity. Urban hospitals performed lower than rural hospitals overall and, on all components, except component 3 (i.e., diagnosis documentation). Based on measure performance by age data, one Standing Committee member recommended adding younger ages in subsequent measure updates. Another member complimented the developers on the comprehensiveness of the data and recommended developing a graphic to ease data interpretation across populations.

The Standing Committee considered the 17 measure-specific comments received by the public and NQF members, as well as the one comment received from the developer. Fifteen commenters supported the measure, and two commenters asked for clarifications based on the 2015-2017 individual measure reviews, the eCQM eFeasibility Scorecard assessment, and data elements testing concerns for the denominator exclusions. NQF received zero comments for not supporting the measure. Having reviewed and discussed the requested performance gap disparities data and the public comments, the Standing

Committee revoted and passed the measure for the performance gap criterion. They also recommended the measure for overall suitability for endorsement. There were no related and competing measures identified for this measure.

References

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Appendix A: Details of Measure Evaluation

Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

Note: Vote totals may differ between measure criteria and between measures as Standing Committee members often have to join calls late or leave calls early. NQF ensures that quorum is maintained for all live voting. All voting outcomes are calculated using the number of Standing Committee members present for that vote as the denominator. Quorum for the Prevention and Population Health Standing Committee is 16 out of 23 members.

Measures Recommended

#3592e Global Malnutrition Composite Score

[Submission](#) | [Specifications](#)

Description: This electronically specified clinical quality measure (eCQM) composite of optimal malnutrition care focuses on adults 65 years and older admitted to inpatient service who received care appropriate to their level of malnutrition risk and/or malnutrition diagnosis if properly identified. Best practices for malnutrition care recommend adult inpatients to be screened for malnutrition risk, assessed to confirm findings of malnutrition if found at-risk, and have the proper severity of malnutrition indicated along with a corresponding nutrition care plan that addresses the respective severity of malnutrition.

The malnutrition composite measure includes four component measures, which are first scored separately. The overall composite score is derived from averaging the individual performance scores.

1. Screening for malnutrition risk at admission.
2. Completing a nutrition assessment for patients who screened for risk of malnutrition.
3. Appropriate documentation of malnutrition diagnosis in the patient's medical record if indicated by the assessment findings.
4. Development of a nutrition care plan for malnourished patients including the recommended treatment plan.

These four measures represent the key processes of care and generated markers of malnutrition associated with the risk identification, diagnosis, and treatment of malnutrition in older hospitalized adults as supported by clinical guidelines and submitted evidence.

Numerator Statement: The Global Malnutrition Composite Score is comprised of four component measures, which are scored separately and who's population is sourced from the overall composite measure denominator.

1. Screening for malnutrition risk at admission
2. Completion of a nutrition assessment for patients who screened for risk of malnutrition
3. Appropriate documentation of malnutrition diagnosis for patients identified with malnutrition
4. Development of a nutrition care plan for malnourished

Denominator Statement: The measure population from which the composite's component measures are sourced from are patients aged 65 years and older who are admitted to an acute inpatient hospital.

1. Screening for Malnutrition Risk at Admission: All patients in the measure population with a documented malnutrition screening no more than 48 hours prior to admission to the hospital.
2. Completion of a Nutrition Assessment for Patients who Screened for Risk of Malnutrition: Patients from the measure population who are documented as at-risk for malnutrition via the completed malnutrition screening.

3. Appropriate Documentation of Malnutrition Diagnosis for Patients Identified with Malnutrition: Patients from the measure population who have a completed nutrition assessment documented with findings of moderate or severe malnutrition.
4. Development of a Nutrition Care Plan for Malnourished Patients: Patients from the measure population who have a documented medical diagnosis of malnutrition in their medical record.

Exclusions: All Four Component Measures: patients with a length of stay less than 24 hours

Component Measure #1 only: admission to screening time interval greater than 48 hours

Component Measure #3 and #4 only: Discharge status of hospice or left against medical advice

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Inpatient/Hospital

Type of Measure: Composite

Data Source: Electronic Health Records (EHRs)

Measure Steward: Academy of Nutrition and Dietetics

STANDING COMMITTEE MEETING February 17 and 18, 2021

1. Importance to Measure and Report: The measure meets the Importance 1a. Evidence criteria. This measure has not reached consensus on 1b. Performance Gap criteria.

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **Total Votes-19; H-1; M-15; L-1; I-2**; 1b. Performance Gap: **Total Votes-18; H-0; M-9; L-2; I-7**; 1c. Composite Quality Construct: **Total Votes-17; H-2; M-14; L-1; I-0**

Rationale:

- The Standing Committee members discussed the significance of malnutrition as a contributor to infections, pressure ulcers, and increases in overall treatment needs seen in patients transferred to other care facilities, such as inpatient rehabs.
- Supporting the composite components, the developer provided the 2011 *American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors* and the *A.S.P.E.N. Clinical Guidelines: Nutrition Screening, Assessment, and Intervention in Adults*, stating that best practices for malnutrition care recommend adult inpatients to be screened for malnutrition risk, assessed to confirm findings of malnutrition if found at-risk, and to have the proper severity of malnutrition indicated along with a corresponding nutrition care plan that addresses the respective severity of malnutrition.
- The developer provided an overview of the Malnutrition Care Workflow, a six-step multidisciplinary approach to identifying older, malnourished hospitalized patients and developing individualized nutrition care plans for use in hospital- and care transition-based interventions.
- Robust systematic literature reviews were also provided for each component with Grade E (Components 1 and 2) and Grade C (Components 3 and 4) supporting evidence that links the four components to decreased hospital length of stay (LOS) and 30-day readmissions.
- Some Standing Committee members debated the need for validated and standardized malnutrition screening and assessment tools, while the developer and other Standing Committee members stated that validated and objective protocols are readily captured in electronic health record (EHR) data fields, such as body mass index (BMI), dietary history, recent weight loss, illness severity, laboratory values, and age.
- The evidence finds that individuals ages 65 years and older have a two to three greater risk of malnutrition than younger individuals and that language barriers negatively contribute to

component and composite performance. The evidence and provided performance data demonstrate gaps for patients ages 18 years and older of relative to reference differences in malnutrition risks across age ranges in years (18-34), (35-64), and (≥65), and by race, ethnicity, and sex.

- A total of 179,336 patients, ages 65 years and older, were sampled for testing in 56 short term, community, academic, medical, and critical access acute care hospitals in 10 states collected for the 2019 calendar year. The average age in years was 76.5 and the mean was 75. The cohort was 77.8% White, 9.68% Black, 1.59% Asian or Pacific Islander, and 9.56% Other, with 4.91% identified as Hispanic.
- Performance scores ranged from 1.18 to 3.77 with a median of 3.32 and mean of 3.07. The ranges of the components' performance consisted of the following: (1) 64%-99%, (2) 12%-100%, (3) 0%-100%, and (4) 0%-100%.
- The Standing Committee expressed concern related to potential disparities in the provided performance data that was not stratified by available social risk data elements, specifically race, ethnicity, geography (urban/rural), and language barriers, stating patients less than 65 years of age may show similar disparities.
- The extensive Standing Committee discussions on evidence and performance gaps included review of the Malnutrition Care Workflow framework and the quality construct and rationale of the composite.
- Standing Committee members noted the team's approach to accountability and poor performance in the proceeding components did not equate to poor performance in the remaining components as the multidisciplinary composite framework creates "fillers" for each step in the process to identify patients when other framework steps are lagging.
- The Standing Committee passed the measure on evidence and composite quality construct.
- Consensus was not reached by the Standing Committee on performance gap.
- During June 3, 2021 the post-comment measure evaluation, the Standing Committee discussed the additional disparities data submitted by the developer, including performance for the overall composite, and the individual components by all adult populations, 65 years and older, and 18 years and older stratified by patient race, ethnicity, sex, and urban/rural designations.
- Overall performance for younger patients was lower than older patients, and White and American Indian/Alaska Natives patients performed generally lower than all other races and ethnicity. Urban hospitals performed lower than rural hospitals overall and, on all components, except component 3 (i.e., diagnosis documentation).
- NQF received zero comments for not supporting the measure.
- Having reviewed and discussed the requested performance gap disparities data and the public comments, the Standing Committee revoted and passed on the measure for the performance gap criterion. They also recommended the measure for overall suitability for endorsement.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria.

(2a. Reliability precise specifications, testing; 2b. Validity testing, threats to validity)

2a. Reliability: **Total Votes-18; H-0; M-13; L-2; I-3**; 2b. Validity: **Total Votes-17; H-0; M-14; L-3; I-0**;

Composite Construction: **Total Votes-18; H-0; M-14; L-3; I-1**

Does the Standing Committee accept the NQF Scientific Methods Panel's Moderate rating of Reliability?

Total Votes-17; Yes –15; No - 2

Does the Standing Committee accept the NQF Scientific Methods Panel's Moderate rating of Validity?

Total Votes-17; Yes - 15; No - 2

Does the Standing Committee accept the NQF Scientific Methods Panel's Moderate rating of Composite Construction?

Total Votes-18; Yes - 15; No - 3

This measure was deemed as complex and was evaluated by the NQF Scientific Methods Panel (SMP).

- The NQF Scientific Methods Panel's ratings for Reliability: **H-2; M-4; L-0; I-2**
- The NQF Scientific Methods Panel's ratings for Validity: **H-0; M-6; L-0; I-2**
- The NQF Scientific Methods Panel's ratings for Composite Construction: **H-2; M-3; L-2; I-1**

Rationale:

Reliability Testing

- As a composite, the scientific acceptability of the measure properties were [evaluated by the SMP](#), who gave the measure a moderate reliability rating. The Standing Committee voted not to accept the SMP's recommendation; therefore, the Standing Committee discussed reliability testing.
- Standing Committee members questioned the effects on reliability without using validated screening and assessment tools in the first two components. The developer stated the eCQM only uses data found in an EHR, which they report are standardized, such as BMI, dietary history, recent weight loss, illness severity, laboratory values, and age. They also stated that they tested the measure in hospitals that already implemented the composite and embedded standardized tools in the EHRs.
- Some Standing Committee members discussed the effect on the composite from non-acute care factors that increase the risk of hospitalization, LOS, and readmissions, including food insecurity, language and financial barriers, insurance denials, homelessness, or other barriers identified in malnutrition care planning. The developers stated that the measure targets high-risk patients, elderly and identified as malnourished, who need nutrition care planning support after hospitalization in community-based interventions.
- To test composite reliability, developers used the variance components extracted from a linear mixed effects (LME) model to calculate the intraclass correlation coefficient (ICC) $ICC = \sigma^2_{\text{between}} / (\sigma^2_{\text{between}} + \sigma^2_{\text{within}})$. This method accommodates inclusion of both fixed and random effects to account for the correlated or non-independent nature of measures that are hierarchically nested within health systems (N = 10) and practice sites (N = 56). Using the ICC to detect signal to noise, a reliability score of 0.70 or greater is considered acceptable for drawing conclusions about groups.
- The measure's reliability was tested with and without case minimums typically recommended by CMS in its quality reporting programs. With case minimums, the ICC calculated was 0.839 and without case minimums, it resulted in an ICC of 0.647, indicating the composite performance measure score is able to detect meaningful differences among provider groups.
- The Standing Committee voted and rated reliability as moderate.

Validity Testing

- The SMP gave the measure a moderate rating for validity. The Standing Committee voted not to accept the SMP's recommendation; therefore, they discussed validity testing.

- The Standing Committee questioned whether the primary driver for improved outcomes, LOS and 30-day readmission, correlates to care plan development, and whether validity testing in hospitals where the components are implemented may bias the findings. They questioned whether outcomes data showing discharge to home versus discharge to skilled nursing facilities were available, and whether implemented care plans at discharge were a greater reflection on health system rather than hospital-based interventions. The developers provided testing on the effects of the individual components to overall outcomes, stating the focal insight of measure implementation was improved identification of patient needs in care transitions.
- Empirical testing for construct validity of the overall composite measure at the score level was performed using a hierarchical linear regression to assess whether the model predictability significantly improved when the components in aggregate were included in the model versus standard outcome predictors, such as patient characteristics, primary diagnoses, and comorbidities. The 30-day readmission and length of stay (LOS) variables were assessed using independent variables: “demographic and clinical” initially, and then with “malnutrition” in a stepped approach to measure the power of malnutrition variables. A goodness-of-fit test was included for malnutrition variables to estimate the incremental improvement.
- Both LOS and readmissions are significantly related to malnutrition, after controlling for other model variables (e.g., patient demographics and primary diagnosis), which are known outcome predictors. The R^2 statistic for the LOS model was 0.063 prior to the inclusion of the aggregate measure components and 0.288 after ($p < 0.001$), and the c-statistic for the 30-day readmissions model was 0.614 before their inclusion and 0.625 after ($p < 0.01$).
- Developers compared the predictability of LOS and 30-day readmissions to the CMS HCC risk-adjustment model that predicts total annual costs for individuals of prospective diagnosis-based models with R^2 values ranging from 0.0186 to 0.1246. Based on this range and the findings of the empirical testing of the composite measure score above, the developers stated that the strength of model predictability and the overall measure is adequate and comparable to measures implemented by CMS for similar purposes.
- A secondary analysis assessed associations between the main composite clinical endpoint (i.e., nutrition care plans for patients with a malnutrition diagnosis) and the outcomes most associated with malnutrition (i.e., 30-day readmissions and LOS) to understand the association of having a nutrition care plan with a malnutrition diagnosis versus not having a nutrition care plan. Results showed a statistically significant relative risk reduction of 24% (21.4% vs. 26.5%, respectively) in the likelihood of 30-day readmissions (OR=0.74, 99%, CI=0.558-0.941). For LOS, hospitalized patients with a malnutrition diagnosis and a nutrition care plan had on average, a three day longer LOS than malnourished patients without a nutrition care plan (LOS of 9.46 vs. 6.46 days, respectively; $p = 0.0001$).
- For the composite performance measure score validity testing, developers stated that the composite measure results are strongly correlated to important clinical outcomes associated with malnutrition, 30-day readmissions, and LOS. A secondary analysis showed that nutrition care plans may be associated with a reduced risk of 30-day readmission for those with malnutrition versus those who are diagnosed with malnutrition but do not have a nutrition care plan.
- Developers assessed validity testing for component measures by conducting construct validity of critical data elements in a generalized linear (logistic) regression model with multiple response

variables for each component: (1) Medical diagnosis in two components, (2) Screening in three components, (3) Time to assessment in three components, and (4) Assessment result in three components. They hypothesized that all predictor variables would correlate to a malnutrition diagnosis outcome (component #3) and together they would be a strong predictor of the malnutrition outcome of the composite and support validity of all composite components. Consistent with the developer's hypothesis, all main effects and two 2-way interactions were highly significant (all p-values <.0001). The c-statistic of 0.828 indicates an excellent fit of the model to the malnutrition diagnosis and nutrition care plan as c-statistics above 0.8 normally indicate a very strong predictive model.

- Developers also tested the correlation or the predictive relationship between the components and outcome of the composite measure with clinical outcomes of patient LOS and 30-day readmissions in a generalized linear mixed model approach. Results showed all, including the outcome of the malnutrition composite measure (i.e., malnutrition diagnosis and nutrition care plan), were significantly predictive of the outcome of LOS ($p<0.0001$) and 30-day readmissions ($p<0.0001$).
- The developer stated the exclusions were identified by the TEP and not explicitly sourced from the literature. The two main exclusions are LOS less than 24 hours equating to insufficient time to complete all component measure interventions and patients discharged to hospice who may have different nutrition support requirements that are based on patient preferences. Testing showed no significant effects on performance scores for all four component measures with or without exclusions.
- Bootstrap resampling methodology was used to generate a 95% confidence interval around the composite score mean and grouped providers into performance categories (Low/Below Mean (19, 40.4%), Medium/Not Different than Mean (7, 14.9%), High/Above Mean (22, 44.7%)) to the 95%. Results are shown among hospitals that meet the case minimum of 20 patients and at least three reportable measures.
- The developers reported the average consistency measure across the sample of hospitals in the testing data set as greater than 95% and missing data were consistently low across all reporting sites due to very high feasibility of the data elements. They stated that all data elements are collected during the care processes and are not burdensome to clinicians; therefore, systematic missing data are not biasing performance.
- The developer also assessed the association between the main composite clinical endpoint (i.e., nutrition care plans for patients with a malnutrition diagnosis) and the outcomes most associated with malnutrition (i.e., 30-day readmissions and LOS). Tests of internal consistency (e.g., Cronbach's alpha and item-to-total correlations) were completed to confirm the equal weighting of each component's contribution to the total composite score. Given the acceptable item-to-total correlations and strong internal consistency indicating how closely related the components are to the total score, the developers concluded that weighting differences for each component are not necessary.
- The Standing Committee voted and rated validity as moderate.

Composite Construction

- The SMP and Standing Committee gave the composite construction a moderate rating.
- SMP members generally favored the composite construction approach, specifically the inclusion of appropriate, process-related components to the provided framework.

- Some SMP members wanted additional details on the equal component weighting and whether nominal (qualitative) rather than interval (quantitative) level data are more appropriate for reliability and validity averaging.
- The Standing Committee did not accept the SMP's moderate vote for composite constructions. No further comments were offered by Standing Committee members, who gave a moderate rating for the composite construction and passed the measure on this sub-criterion.
- The Standing Committee passed the measure on reliability, validity, and composite construction.

3. Feasibility: Total Votes-17; H-3; M-12; L-2; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- ALL data elements are in defined fields in EHRs and are routinely collected during clinical care; therefore, the Standing Committee's discussion was limited.
- The eFeasibility score card is provided for all critical data elements that were tested in three EHRs: Epic, Cerner, and AllScripts.
- The following critical data elements were rated for current and future feasibility out of 12 possible points: (1) malnutrition risk screening (12, 12), (2) malnutrition at-risk (11.83, 12), (3) nutrition assessment (11.83, 12), (4) nutrition assessment result (moderately and severely malnourished) (11.5, 12), (5) malnutrition diagnosis (12, 12), and (6) nutrition care plan (11.41, 11.84).
- All critical data elements of the eCQM are listed in the NLM VSAC.
- The Standing Committee passed the measure on feasibility.

4. Use and Usability

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Total Votes-16; Pass-15; No Pass-1** 4b. Usability: **Total Votes-16; H-4; M-8; L-3; I-1**

Rationale:

- This new eCQM composite measure is planned for use in public reporting, public health/disease surveillance, payment program, regulatory and accreditation programs, professional certification or recognition program, and quality improvement (internal to the specific organization). It is currently used in quality improvement (external benchmarking to organizations), and the Malnutrition Quality Improvement Initiative (MQii)
- The MQii is designed to help participating hospitals improve malnutrition care and subsequently achieve better outcomes. The primary goal is to advance evidence-based, high quality, patient-driven care for hospitalized older adults who are malnourished or at-risk for malnutrition and supporting hospitals with tools and resources to improve quality.
- The 105 MQii-participating hospitals receive biannual performance feedback and benchmarking of individual hospitals, overall composite scores, hospital readmissions, and LOS in relation to other facilities by hospital type and size during the same period, and longitudinally.
- Participants in the MQii participate in recurring group technical calls and feedback sessions sharing their best practices, lessons learned, and quality improvement efforts. Participants are periodically surveyed to assess the focus and experience with measure implementation. Some participants submit their experiences to peer-reviewed journals for publication.

- The eCQM composite is currently listed in the Centers for Medicare & Medicaid Services (CMS) CMIT and is under consideration by NQF's Measure Applications Partnership (MAP) for use in the Hospital Inpatient Quality Reporting (Hospital IQR) Program.
- The Standing Committee passed the measure on use and usability.

5. Related and Competing Measures

- No related or competing measures were noted.

6. Standing Committee Recommendation for Endorsement: Total Votes-17; Y-15; N-2

Rationale:

- The Standing Committee did not reach consensus for the Importance 1b. Performance Gap criteria based on the evaluation criteria. They requested disparities data based on age (including less than 65 years, race, ethnicity, and geography) as the presented evidence and the empirical data demonstrated identified health disparities, specifically for the African American and Hispanic communities. There was wide acceptance for the literature-based evidence demonstrating the disparities of risk of malnutrition and performance gaps for select populations. NQF staff will guide developers to provide the requested health disparities data for the Standing Committee's post-comment web meeting on June 3, 2021.
- After review of the performance gap criterion and documentation, the Standing Committee had no further discussion on the suitability for endorsement. They subsequently recommended the measure suitable for endorsement in a 15/2 (i.e., yes/no) vote.

7. Public and Member Comment

- The Standing Committee considered the 17 measure-specific comments received by the public and NQF members, as well as the one comment received from the developer. Fifteen commenters supported the measure, and two commenters asked for clarifications based on the 2015-2017 individual measure reviews, the eCQM eFeasibility Scorecard assessment, and data elements testing concerns for the denominator exclusions.

8. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

9. Appeals

Appendix B: Prevention and Population Health Portfolio—Use in Federal Programs^a

NQF #	Title	Federal Programs: Finalized or Implemented
0024	Weight Assessment and Counseling for Nutrition and Physical Activity for Children/Adolescents (WCC)	Medicaid (Implemented); Marketplace Quality Rating System (QRS) (Implemented)
0032	Cervical Cancer Screening (CCS)	Medicaid (Implemented); QRS (Implemented)
0034	Colorectal Cancer Screening (COL)	Medicare Shared Savings Program (MSSP); (Implemented) MIPS Program (Implemented); QRS (Implemented); Medicare Part C Star Rating (Implemented)
0038	Childhood Immunization Status (CIS)	Medicaid (Implemented); QRS (Implemented)
0039	Flu Vaccinations for Adults Ages 18 and Older	Medicaid (Implemented); QRS (Implemented)
0041	Preventive Care and Screening: Influenza Immunization	MSSP (Implemented); MIPS Program (Implemented)
0041e	Preventive Care and Screening: Influenza Immunization	MIPS Program (Implemented); Medicaid Promoting Interoperability Program for Eligible Professionals (Implemented)
0226	Influenza Immunization in the ESRD Population (Facility Level)	No federal program usage was specified for this measure.
0272	Diabetes Short-Term Complications Admission Rate (PQI 01)	Medicaid (Implemented)
0274	Diabetes Long-Term Complications Admission Rate (PQI 03)	No federal program usage was specified for this measure.
0275	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate (PQI 05)	Medicaid (Implemented)

^a Per CMS Measures Inventory Tool as of 01/28/2021

NQF #	Title	Federal Programs: Finalized or Implemented
0277	Congestive Heart Failure Rate (PQI 08)	Medicaid (Implemented)
0279	Community-Acquired Pneumonia Admission Rate (PQI 11)	No federal program usage was specified for this measure.
0281	Urinary Tract Infection Admission Rate (PQI 12)	No federal program usage was specified for this measure.
0283	Asthma in Younger Adults Admission Rate (PQI 15)	Medicaid (Implemented)
0285	Lower-Extremity Amputation Among Patients With Diabetes Rate (PQI 16)	No federal program usage was specified for this measure.
0431	Influenza Vaccination Coverage Among Healthcare Personnel	Prospective Payment System-Exempt Cancer Hospital Quality Reporting (Implemented); Hospital Inpatient Quality Reporting (Implemented); Inpatient Rehabilitation Facility Quality Reporting (Implemented); Long-Term Care Hospital Quality Reporting (Implemented); Home Health Value-Based Purchasing (Implemented)
0638	Uncontrolled Diabetes Admission Rate (PQI 14)	No federal program usage was specified for this measure.
0658	Appropriate Follow-Up Interval for Normal Colonoscopy in Average Risk Patients	Ambulatory Surgical Center Quality Reporting (Implemented); Hospital Outpatient Quality Reporting (Implemented); MIPS Program (Implemented)
0680	Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (short stay)	No federal program usage was specified for this measure.
0681	Percent of Residents Assessed and Appropriately Given the Seasonal Influenza Vaccine (Long Stay)	No federal program usage was specified for this measure.
1392	Well-Child Visits in the First 15 Months of Life	Medicaid (Implemented); QRS (Implemented)
1407	Immunizations for Adolescents	MIPS Program (Implemented); Medicaid (Implemented); QRS (Implemented)

NQF #	Title	Federal Programs: Finalized or Implemented
1516	Well-Child Visits in the Third, Fourth, Fifth, and Sixth Years of Life	Medicaid (Implemented); QRS (Implemented)
1659	Influenza Immunization	Care Compare (Implemented); Inpatient Psychiatric Facility Quality Reporting (Implemented)
2372	Breast Cancer Screening	Medicare Part C Star Rating (Implemented); MSSP (Implemented); MIPS Program (Implemented); Medicaid (Implemented); QRS (Implemented)
2511	Utilization of Services, Dental Services	No federal program usage was specified for this measure.
2517	Oral Evaluation, Dental Services	No federal program usage was specified for this measure.
2528	Prevention: Topical Fluoride for Children at Elevated Caries Risk, Dental Services	No federal program usage was specified for this measure.
2689	Ambulatory Care Sensitive Emergency Department Visits for Dental Caries in Children	No federal program usage was specified for this measure.
2695	Follow-Up After Emergency Department Visits for Dental Caries in Children	No federal program usage was specified for this measure.
3154	Informed Participation	No federal program usage was specified for this measure.
3484	Prenatal Immunization Status	No federal program usage was specified for this measure.

Appendix C: Prevention and Population Health Standing Committee and NQF Staff

STANDING COMMITTEE

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Retired

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NATIONAL QUALITY FORUM

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Appendix D: Measure Specifications

3592e Global Malnutrition Composite Score

STEWARD

Academy of Nutrition and Dietetics

DESCRIPTION

This composite measure of optimal malnutrition care focuses on adults 65 years and older admitted to inpatient service who received care appropriate to their level of malnutrition risk and/or malnutrition diagnosis if properly identified. Best practices for malnutrition care recommend adult inpatients to be screened for malnutrition risk, assessed to confirm findings of malnutrition if found at-risk, and have the proper severity of malnutrition indicated along with a corresponding nutrition care plan that addresses the respective severity of malnutrition.

The malnutrition composite measure includes four component measures which are first scored separately. The overall composite score is derived from averaging the individual performance scores.

1. Screening for malnutrition risk at admission.
2. Completing a nutrition assessment for patients who screened for risk of malnutrition.
3. Appropriate documentation of malnutrition diagnosis in the patient's medical record if indicated by the assessment findings.
4. Development of a nutrition care plan for malnourished patients including the recommended treatment plan.

These four measures represent the key processes of care and generated markers of malnutrition associated with the risk identification, diagnosis, and treatment of malnutrition in older hospitalized adults as supported by clinical guidelines.

TYPE

Composite eQIM

DATA SOURCE

Electronic Health Records

LEVEL

Facility

SETTING

Inpatient/Hospital

NUMERATOR STATEMENT

The Global Malnutrition Composite Score is comprised of four component measures which are scored separately and whose population is sourced from the overall composite measure denominator.

1. Screening for malnutrition risk at admission
2. Completion of a nutrition assessment for patients who screened for risk of malnutrition
3. Appropriate documentation of malnutrition diagnosis for patients identified with malnutrition

4. Development of a nutrition care plan for malnourished

NUMERATOR DETAILS

The composite measure is calculated by summing and then averaging the performance scores for each of the four component measures included in the overall composite measure. Each component measure is a proportion measure. CQL-specifications for all data elements used to calculate each component measure are attached to this form.

Component Measure Numerators are listed below:

- Component Measure 1 - Screening for Malnutrition Risk at Admission
Numerator - All patients in the measure population who are documented as at-risk for malnutrition via the completed malnutrition screening
- Component Measure 2 - Completion of a Nutrition Assessment for Patients who Screened for Risk of Malnutrition
Numerator - Patients at-risk of malnutrition who have a completed nutrition assessment documented
- Component Measure 3 - Appropriate Documentation of Malnutrition Diagnosis for Patients Identified with Malnutrition
Numerator - Patients who have been identified as moderately or severely malnourished by the nutrition assessment who also have a documented medical diagnosis of malnutrition in their medical record
- Component Measure 4 - Development of a Nutrition Care Plan for Malnourished Patients
Numerator - Patients with a documented medical diagnosis of malnutrition in their medical record who have a documented nutrition care plan with treatment recommendations to address malnutrition

DENOMINATOR STATEMENT

The measure population from which the composite's component measures are sourced from are patients age 65 years and older who are admitted to an acute inpatient hospital.

DENOMINATOR DETAILS

Component Measure Denominators are Listed Below:

- Component Measure 1 - Screening for Malnutrition Risk at Admission
Denominator - All patients in the measure population with a documented malnutrition screening no more than 48 hours prior to admission to the hospital
- Component Measure 2 - Completion of a Nutrition Assessment for Patients who Screened for Risk of Malnutrition
Denominator - Patients from the measure population who are documented as at-risk for malnutrition via the completed malnutrition screening
- Component Measure 3 - Appropriate Documentation of Malnutrition Diagnosis for Patients Identified with Malnutrition
Denominator - Patients from the measure population who have a completed nutrition assessment documented with findings of moderate or severe malnutrition
- Component Measure 4 - Development of a Nutrition Care Plan for Malnourished Patients
Denominator - Patients from the measure population who have a documented medical diagnosis of malnutrition in their medical record

EXCLUSIONS

All Four Component Measures: patients with a length of stay less than 24 hours

Component Measure #1 only: admission to screening time interval greater than 48 hours

Component Measure #3 and #4 only : Discharge status of hospice or left against medical advice

EXCLUSION DETAILS

- Patient Length of Stay less than 24 hours: all patients with a calculated length of stay (All component measures)
- Admission to Screening Time Interval greater than 48 hours (Component measure 1)
- Discharge Status – Hospice (Component measures 3 and 4)
- Discharge Status – Left Against Medical Advice (Component measures 3 and 4)

RISK ADJUSTMENT

No risk adjustment or risk stratification

STRATIFICATION

N/A

TYPE SCORE

Continuous variable, (e.g., average), better quality = higher score

ALGORITHM

The measure is constructed as an arithmetic average of the four components weighted equally.

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Appendix E: Related and Competing Measures

No related and competing measures were identified.

Appendix F: Pre-Evaluation Comments

No comments received as of January 26, 2021.

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