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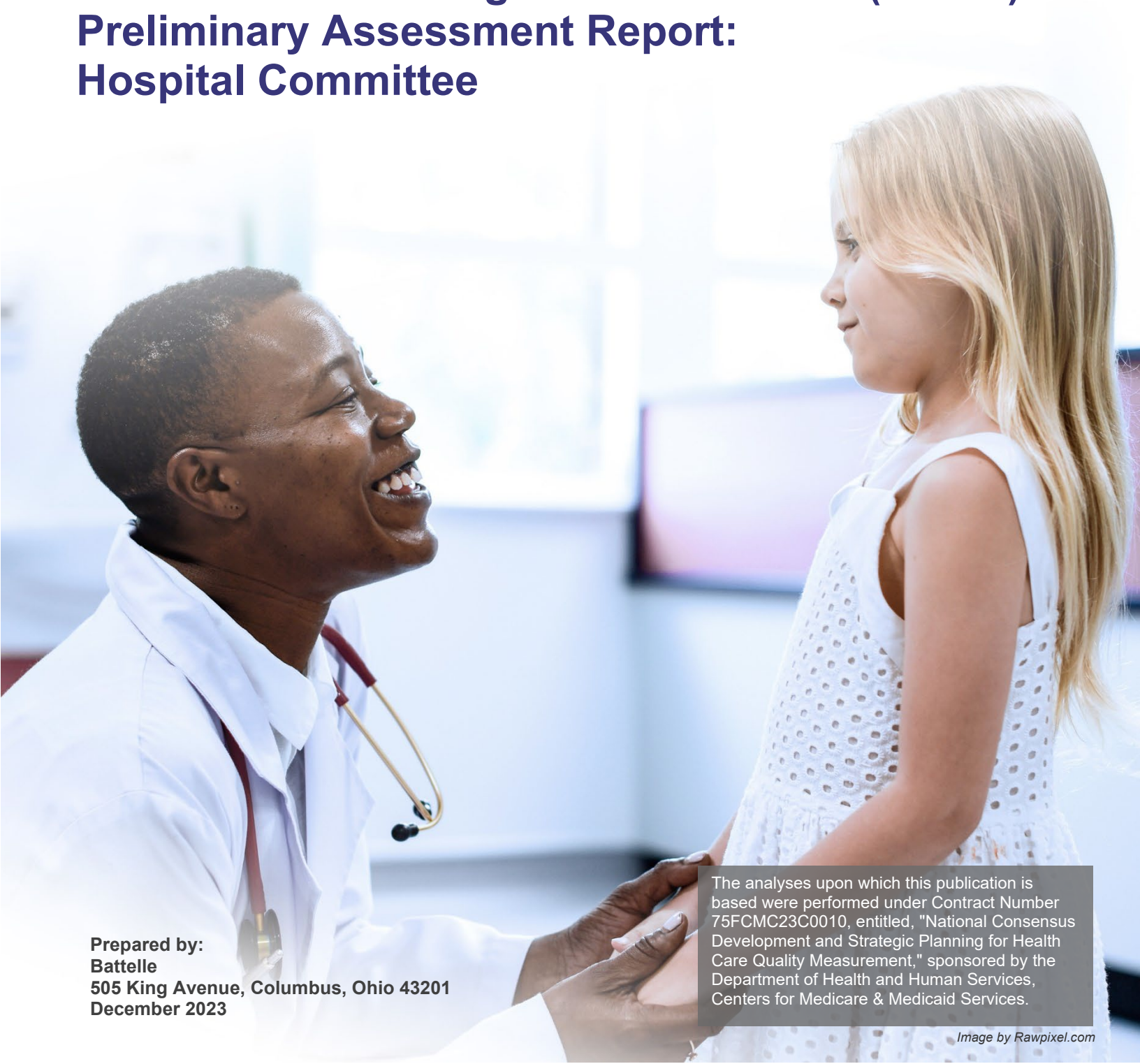
National Consensus Development and Strategic Planning for Health Care Quality Measurement

2023 Pre-Rulemaking Measure Review (PRMR) Preliminary Assessment Report: Hospital Committee



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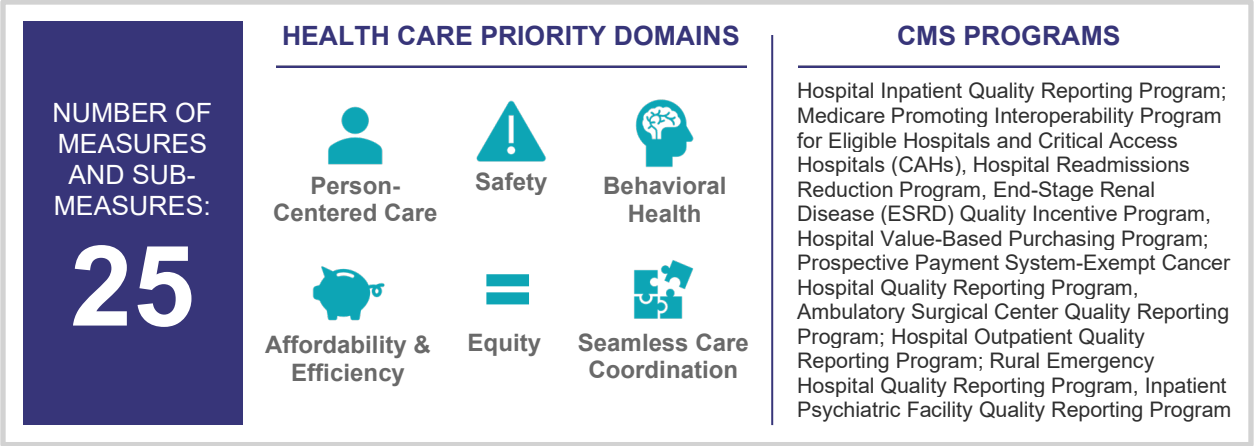
Executive Summary

The Pre-Rulemaking Measure Review (PRMR) process, undertaken yearly, informs the selection of health care quality and efficiency measures for use in Centers for Medicare & Medicaid Services (CMS) Medicare quality programs. Each cycle begins with the publication of the Measures Under Consideration (MUC) list. The MUC list is reviewed by interested parties, selected to serve on PRMR committees. The PRMR process engages a diverse group of interested parties in making consensus-based recommendations regarding the inclusion of considered measures.

This PRMR Preliminary Assessment (PA) Report for the Hospital Committee provides PRMR Advisory and Recommendation Group members with a detailed baseline evaluation of the measures under consideration for hospital-relevant CMS programs this PRMR cycle. The findings of this report will enable committee members to further examine and discuss measure suitability for the selected CMS program(s) during the PRMR Recommendation Group Meetings in January 2024.

Measure assessment included evaluation of submission materials such as CMS MUC Entry/Review Information Tool (MERIT) submission forms, reliability and validity testing results, and summaries of evidence for measure relevance to specific program populations. A team of Battelle measure evaluators reviewed submission materials for the 25 measures and sub-measures under consideration for multiple programs and applied standardized criteria across the domain of meaningfulness including elements such as importance, conformance, feasibility, validity, reliability, and usability. The measure evaluations and descriptions of available evidence in this report will inform PRMR committee consideration of measure meaningfulness as well as additional criteria of appropriateness of scale and time to value realization during later stages of the PRMR cycle.

Figure 1. Hospital Committee Measures Under Consideration



Introduction

1.1 PRMR Overview

The goal of the PRMR process is to inform the selection of health care quality and efficiency measures for use in CMS Medicare quality programs. Input from interested parties informs these recommendations throughout the measure life cycle. The cornerstone of a transparent and inclusive consensus-based process is effective engagement of interested parties. This ensures that meaningful feedback is provided to CMS on all measures proposed for inclusion in CMS payment programs. The PRMR process convenes and engages interested parties throughout the cycle. The interested parties include those who are impacted or affected by the use of quality and efficiency measures. Interested parties come from a variety of places (Figure 2) and represent a diverse group of people.

Figure 2. PRMR Interested Parties

The U.S. Department of Health & Human Services (HHS), per statute[1], publishes annually (by December 1) a list of measures under consideration (MUC) for future federal rulemaking. The PRMR process makes consensus recommendations regarding the inclusion of measures being considered for CMS quality reporting and value-based programs. PRMR's review focuses on a measure's appropriateness for a specific program. It assesses if, within the proposed program, the measure is meaningful, tailored to the program's unique needs, balanced, and scaled to meet program-specific goals, and demonstrates a clear vision of near- and long-term program impacts.

Previously conducted via the Measure Applications Partnership (MAP) process, the annual review of measures under consideration is now called Pre-Rulemaking Measure Review (PRMR, pronounced Primer).

[1] Section 3014 of the Patient Protection and Affordable Care Act of 2010 (ACA) (P.L. 111-148) created section 1890A of the Social Security Act (the Act), which required HHS to establish a federal pre-rulemaking process for the selection of quality and efficiency measures for use by HHS.

1.2 Relevant CMS Program

More information on the programs for the 25 measures under consideration for the Hospital Committee can be found in Appendix A.

The Ambulatory Surgical Center Quality Reporting Program collects and publicly reports facility-level quality measure data from ambulatory surgical centers (ASCs) paid under the ASC fee schedule for care provided in this setting. The quality measures selected for use in this program evaluate the care with which an ASC provides treatment or adheres to processes expected to facilitate the best patient outcomes for the aspects of care measured. This is done by converting patient recorded information into metrics that allow for both facilities and consumers to assess and compare facility care performance in the ASC setting. CMS publishes information on the quality of care provided to patients. This creates transparency for consumers and encourages healthcare providers and facilities to make continued improvements in care quality.

The Hospital Outpatient Quality Reporting Program collects quality measure data from short-term acute-care hospitals paid under the Outpatient Prospective Payment System (OPPS) for care provided in the hospital outpatient departments (HOPDs). This program provides a financial incentive to hospitals to report their quality-of-care measure data and gives CMS data to help Medicare beneficiaries make more informed decisions about their health care through public reporting of measure data on the CMS website.

The Hospital Inpatient Quality Reporting Program collects quality data from hospitals paid under the Inpatient Prospective Payment System, with the goal of driving quality improvement through measurement and transparency by publicly displaying data to help consumers make more informed decisions about their health care.

The Inpatient Psychiatric Facility Quality Reporting Program encourages facilities and clinicians to improve the quality of inpatient care. It helps by making sure providers know about and report on the best practices for their facilities and the type of care they give by submitting quality data to CMS annually.

The Rural Emergency Hospital Quality Reporting Program is a newer program that seeks to gather and publicly report information on care provided by Rural Emergency Hospitals (REHs) so that information is available to inform patient choice for choosing where to obtain care. It also encourages REHs to improve the quality and efficiency of care.

The Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs) program encourages eligible professionals, hospitals and CAHs to adopt, implement, upgrade, and demonstrate meaningful use of certified electronic health record technology (CEHRT) with a focus on interoperability and improving patient access to health information.

The Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program is intended to encourage quality improvement through measurement and transparency, so patients are better informed to make choices regarding their health care.

The Medicare Shared Savings Program is a voluntary program that offers providers and suppliers an opportunity to create an Accountable Care Organization (ACO), that agrees to be held accountable for the quality, cost, and experience of care of an assigned Medicare fee-for-service (FFS) beneficiary population. It promotes accountability for the patient population,

coordinates items and services for Medicare FFS beneficiaries, and encourages investment in high quality and efficient services.

The End-Stage Renal Disease Quality Incentive Program (QIP) promotes high-quality services in renal dialysis facilities and reduces payments to renal dialysis facilities that do not meet or exceed certain performance standards on applicable measures.

The Hospital Value-Based Purchasing Program rewards hospitals with incentive payments for the quality of care provided in the inpatient hospital setting. It adjusts payments to hospitals under the Inpatients Prospective Payment System (IPPS) based on the quality of care they deliver. It encourages hospitals to improve the quality, efficiency, patient experience and safety of care that Medicare beneficiaries receive during acute care inpatient stays. More information on these programs and structure for 2023 is available in Appendix A, which includes excerpts from the CMS Measures Under Consideration List: Program-Specific Measure Needs and Priorities.

The Hospital Readmissions Reduction Program is a value-based purchasing program that program that encourages hospitals to improve communication and care coordination to better engage patients and caregivers in discharge plans and in turn, prevent avoidable readmissions.

1.3 Measures Under Consideration

For the 2023 PRMR review cycle, there are 25 measures under consideration for inclusion in the 11 PRMR Hospital Committees described above. “Cascade Priority” area is included to show the alignment of each measure with a meaningful measure area and to provide more context for what the measure’s addition could bring to the selected CMS program. Measures submitted to multiple programs are marked with an asterisk. PRMR Committee members using this report to facilitate review of measures under consideration should note which program they are assessing measure fit for in their responses. These measures are available for public comment at the PQM website December 1-22, 2023.

Table 1. MUC list by Health Care Priority

MUC ID	Measure Title	Cascade Priority	CMS Program
MUC2023-048*	Hospital Harm - Falls with Injury	Safety	Hospital Inpatient Quality Reporting Program Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs)
MUC2023-049*	Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications (Failure-to-Rescue)	Safety	Hospital Inpatient Quality Reporting Program
MUC2023-050*	Hospital Harm - Postoperative Respiratory Failure	Safety	Hospital Inpatient Quality Reporting Program Medicare Promoting Interoperability Program for Eligible Hospitals and

MUC ID	Measure Title	Cascade Priority	CMS Program
			Critical Access Hospitals (CAHs)
MUC2023-114*	Global Malnutrition Composite Score	Seamless Care Coordination	Hospital Inpatient Quality Reporting Program Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs)
MUC2023-117	Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI)	Seamless Care Coordination	Hospital Readmissions Reduction Program
MUC2023-119	Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF)	Seamless Care Coordination	Hospital Readmissions Reduction Program
MUC2023-120	Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN)	Affordability and Efficiency	Hospital Readmissions Reduction Program
MUC2023-138	ESRD Dialysis Patient Life Goals Survey (PaLS)	Person-Centered Care	End-Stage Renal Disease (ESRD) Quality Incentive Program
MUC2023-139	Hospital Equity Index (HEI)	Equity	Hospital Inpatient Quality Reporting Program
MUC2023-146*	Care Coordination-Hospital Patient Experience of Care	Person-centered care	Hospital Inpatient Quality Reporting Program Hospital Value-Based Purchasing Program Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
MUC2023-147*	Restfulness of Hospital Environment - Hospital Patient Experience of Care	Person-centered care	Hospital Inpatient Quality Reporting Program Hospital Value-Based Purchasing Program Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
MUC2023-148*	Responsiveness of Hospital Staff - Hospital Patient Experience of Care	Person-centered care	Hospital Inpatient Quality Reporting Program Hospital Value-Based Purchasing Program Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program

MUC ID	Measure Title	Cascade Priority	CMS Program
MUC2023-149*	Information about Symptoms - Hospital Patient Experience of Care Standalone Item	Person-centered care	Hospital Inpatient Quality Reporting Program Hospital Value-Based Purchasing Program Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
MUC2023-156*	Screening for Social Drivers of Health (SDOH)	Equity	Ambulatory Surgical Center Quality Reporting Program Hospital Outpatient Quality Reporting Program Rural Emergency Hospital Quality Reporting Program
MUC2023-171*	Screen Positive Rate for Social Drivers of Health (SDOH)	Equity	Ambulatory Surgical Center Quality Reporting Program Hospital Outpatient Quality Reporting Program Rural Emergency Hospital Quality Reporting Program
MUC2023-172	Patient Understanding of Key Information Related to Recovery After a Facility-Based Outpatient Procedure or Surgery, Patient Reported Outcome-Based Performance Measure (Information Transfer PRO-PM)	Person-Centered Care	Hospital Outpatient Quality Reporting Program
MUC2023-175	Facility Commitment to Health Equity	Equity	Ambulatory Surgical Center Quality Reporting Program
MUC2023-176*	Hospital Commitment to Health Equity	Equity	Hospital Outpatient Quality Reporting Program Rural Emergency Hospital Quality Reporting Program
MUC2023-181	30-Day Risk-Standardized All-Cause Emergency Department Visit Following an Inpatient Psychiatric Facility Discharge	Behavioral health	Inpatient Psychiatric Facility Quality Reporting Program
MUC2023-188*	Patient Safety Structural Measure	Person-Centered Care	Hospital Inpatient Quality Reporting Program Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
MUC2023-196	Age Friendly Hospital Measure	Person-Centered Care	Hospital Inpatient Quality Reporting Program

MUC ID	Measure Title	Cascade Priority	CMS Program
MUC2023-199*	Connection to Community Service Provider	Equity	Hospital Inpatient Quality Reporting Program Medicare Shared Savings Program
MUC2023-210*	Resolution of At Least 1 Health-Related Social Need	Equity	Hospital Inpatient Quality Reporting Program Medicare Shared Savings Program
MUC2023-219	Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio	Safety	Hospital Inpatient Quality Reporting Program
MUC2023-220	Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio	Safety	Hospital Inpatient Quality Reporting Program

2. Preliminary Assessment Methodology

2.1 Goals and Objectives

The goal of this PRMR Preliminary Assessment Report for the Hospital Committee is to provide committee members with a thorough and standardized baseline evaluation of the measures under consideration for Hospital programs. This preliminary assessment supports committee members as they further examine and discuss measure suitability to the selected CMS program before and during the PRMR Recommendation Group Meetings.

To achieve this goal, Battelle staff conducted preliminary assessments of each measure with three objectives in mind:

1) To assess completeness of measure information provided in the CMS MUC Entry/Review Information Tool (CMS MERIT) submission and review available testing/performance data.
2) To evaluate measures against consistent criteria with an emphasis on importance, conformance, feasibility, reliability, validity, and usability (i.e., meaningfulness).
3) To provide a summary of findings based on the evaluation criteria that describes the likelihood that each measure meets “meaningfulness” requirements for use in a CMS program. Note: Measures that have received CBE endorsement are assumed to largely meet the meaningfulness criteria, although reviewers are asked to consider the specific needs of the selected program when evaluating this for PRMR.

2.2 Data Sources

To conduct this preliminary assessment, Battelle staff reviewed submission documentation provided in the CMS MERIT system. The types of information provided varied by measure but generally fell into the following categories: CMS MERIT Submission Forms, Measure

Information Forms, summaries of peer-reviewed literature or lists of citations, clinical practice guidelines, validity and reliability testing methods and results, and electronic clinical quality measure (eCQM) feasibility testing information, if applicable.

2.3 Evaluation Criteria

A team of experienced measure evaluators reviewed the available information for each measure from the data sources listed above and compared it against evaluation criteria for meaningfulness. Figure 3 illustrates the evaluation process. Submission forms, clinical guidelines and supporting evidence, validity and reliability testing and any relevant eCQM materials were reviewed and evaluated based on the criteria outlined for meaningfulness in the PRMR Guidebook of Policies and Procedures.

Table 2.3.1 provides a detailed review of the evaluation criteria used by staff in developing the preliminary assessment.

Figure 3. Evaluation Process

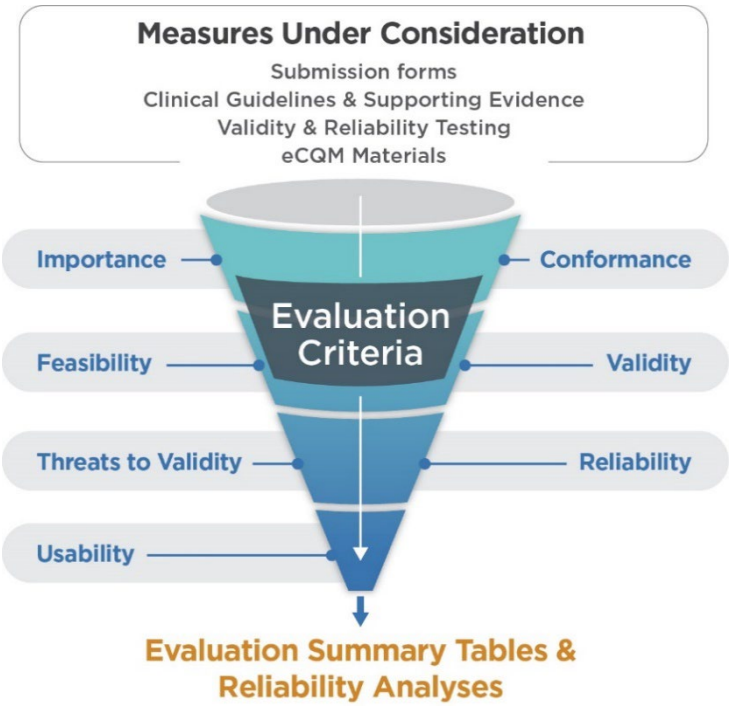


Table 2.3.1. Evaluation Criteria

Evaluation Criteria	Guiding Question
Concept of Interest	
Importance	*Does the measure align with interested party goals and priorities?*
Conformance	*Does the measure as specified align with the conceptual intent?*
Feasibility	*Does the measure's specification and data collection minimize burden?*
Context of Use	
Importance	*Will performance improvement to the benchmark have a significant impact on population outcomes?*
Reliability	*Is measure performance scientifically sound?*
Validity	*May providers/facilities/care systems effectively improve on this measure?*

Evaluation Criteria	Guiding Question
Threats to Validity	*If appropriate, is the measure risk adjusted to account for factors outside entity control?*
Usability	*Is there opportunity for improvement on this measure in the intended use setting?*

2.4 Data Analysis

Battelle staff reviewed and evaluated validity and reliability testing results provided in submission materials. Additionally, when reliability testing results were available, a team of Battelle analysts simulated median reliability to assess performance score deciles and reliability deciles and to generate mean reliability for the target population. The distribution of reliability across entities is important, and denominator size (generally patient population) has a substantial impact on reliability estimates for a single entity. This information is not currently requested from the developer, but the data provided in the measure report and supplemental materials are used to simulate a dataset that closely mirrors any mean, standard deviation, and percentile information provided for the performance score or for reliability for the target patient population. Where possible, tables containing results of reliability analyses follow the measure evaluation tables for each measure. These values were generated through the following process and correspond to the order in which tables are shown:

1) Entities are sorted by performance score, and the average score by decile (estimated from the simulated data) is listed along with the simulated number of entities and episodes included in each average. Average, standard deviation, and minimum and maximum scores are also included.

2) Entities are sorted by the number of care episodes, and the average reliability by decile (estimated from the simulated data) is reported along with the simulated number of entities and episodes included in each average and the average number of episodes per decile.

3) Entities are sorted by reliability, and the average reliability by decile (estimated from the simulated data) is reported. Average, standard deviation, and minimum and maximum reliability and inter-quartile range (IQR) are also included.

Battelle uses a reliability threshold of 0.6 for individual entities in these analyses, which aligns with reliability thresholds used across other CMS initiatives. In some instances, developers provided reliability-by-decile tables for inclusion in the report. These measures have footnotes to inform PRMR committee members if a table was derived via Battelle's simulated reliability analyses or was provided by the measure developer and derived from original testing data.

PRMR committee members should note that there is variation in the types of testing and data availability expected for measures at different stages of use and measure type. For example, when compared to in-use measures that are undergoing substantial changes, new measures do not have measure information forms and may have less robust testing and use available data. The history of each measure's endorsement pathway and inclusion in CMS programs is noted in the background section for each measure to guide PRMR committee members in their review. The appropriate testing methodology for validity and reliability may vary by measure type, and some measures may not be well-suited to utilizing risk-adjustment models. Methods such as

empiric validity were also not required as part of MUC submission but may provide stronger evidence of measure performance and suitability where submitted. When evaluators note that testing scores, clinical guidelines, or other information is absent from submitted materials, PRMR committee members should focus on the available information and direct their reviews toward possible implementation of each measure for the selected program.

Table 2.4.1 provides a summary of data sources that were submitted through CMS MERIT and reviewed, and the kinds of evidence and analyses presented in each submission. The focus in the table is on testing performed at the measured-entity level, and the type of testing performed is noted.

Table 2.4.1. Data Sources for Hospital Measures Under Consideration

MUC ID	Measure Title	Information Reviewed	Information Not Available
MUC2023-048	Hospital Harm - Falls with Injury	✓ MERIT Submission Form ✓ Measure Information Form ✓ Clinical Practice Guidelines ✓ Face Validity ✓ Reliability: Random Split-Half Correlation ✓ eCQM Feasibility Testing	--
MUC2023-049	Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications (Failure-to-Rescue)	✓ MERIT Submission Form ✓ Clinical Practice Guidelines: Systematic Reviews ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Known Groups (Construct) Validity	× Measure Information Form
MUC2023-050	Hospital Harm - Postoperative Respiratory Failure	✓ MERIT Submission Form ✓ Measure Information Form ✓ Empiric Validity: Pearson Correlations ✓ Reliability: Signal-to-Noise ✓ eCQM Feasibility Testing	--
MUC2023-114*	Global Malnutrition Composite Score	✓ MERIT Submission Form	--

MUC ID	Measure Title	Information Reviewed	Information Not Available
		✓ Measure Information Form ✓ Peer-Reviewed Literature and Clinical Practice Guidelines ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Construct Validity ✓ eCQM Feasibility Testing	
MUC2023-117	Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI)	✓ MERIT Submission Form ✓ Peer-Reviewed Literature and Grey Literature ✓ Reliability: Random Split-Half Correlation ✓ Empiric Validity: Pearson Correlation Coefficient	--
MUC2023-119	Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF)	✓ MERIT Submission Form ✓ Peer-Reviewed Literature and Grey Literature ✓ Reliability: Random Split-Half Correlation ✓ Empiric Validity: Pearson Correlation Coefficient	× Measure Information Form
MUC2023-120	Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN)	✓ MERIT Submission Form ✓ Peer-Reviewed Literature and Grey Literature ✓ Reliability: Random Split-Half Correlation ✓ Empiric Validity: Pearson Correlation Coefficient	× Measure Information Form
MUC2023-138	ESRD Dialysis Patient Life Goals Survey (PaLS)	✓ MERIT Submission Form ✓ Measure Information Form	--

MUC ID	Measure Title	Information Reviewed	Information Not Available
		✓ Reliability: Random Split-Half Correlation ✓ Empiric Validity: Known-Groups Validation, Floor and Ceiling Effects, Convergent and Discriminant Validity, and Responsiveness ✓ Peer-Reviewed Literature	
MUC2023-139	Hospital Equity Index (HEI)	✓ MERIT Submission Form ✓ Peer Reviewed Literature	× Entity-level Reliability × Face or Empiric Validity
MUC2023-146	Care Coordination - Hospital Patient Experience of Care	✓ MERIT Submission Form ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: hospital-level bivariate Pearson correlation ✓ Peer-Reviewed Literature	× Measure Information Form × Clinical Practice Guideline
MUC2023-147	Restfulness of Hospital Environment - Hospital Patient Experience of Care	✓ MERIT Submission Form ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: hospital-level bivariate Pearson correlation ✓ Peer-Reviewed Literature	× Measure Information Form × Clinical Practice Guideline
MUC2023-148	Responsiveness of Hospital Staff - Hospital Patient Experience of Care	✓ MERIT Submission Form ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: hospital-level bivariate Pearson correlation ✓ Peer-Reviewed Literature	× Measure Information Form × Clinical Practice Guideline
MUC2023-149	Information about Symptoms - Hospital	✓ MERIT Submission Form	× Measure Information Form

MUC ID	Measure Title	Information Reviewed	Information Not Available
	Patient Experience of Care Standalone Item	✓ Reliability: Signal-to-Noise ✓ Empiric Validity: hospital-level bivariate Pearson correlation ✓ Peer-Reviewed Literature	× Clinical Practice Guideline
MUC2023-156	Screening for Social Drivers of Health (SDOH)	✓ MERIT Submission Form ✓ Empiric Validity: Data Element Validity Internal Consistency; Predictive Validity ✓ Peer-Reviewed Literature and Clinical Practice Guidelines ✓ Inter-rater Reliability	× Entity-level Reliability × Measure Information Form
MUC2023-171	Screen Positive Rate for Social Drivers of Health (SDOH)	✓ MERIT Submission Form ✓ Peer-Reviewed Literature and Clinical Practice Guidelines ✓ Empiric Validity: Data Element Validity Internal Consistency; Predictive Validity ✓ Inter-rater Reliability	× Entity-level Reliability × Measure Information Form
MUC2023-172	Information Transfer PRO-PM	✓ MERIT Submission Form ✓ Peer-Reviewed Literature and Clinical Practice Guidelines ✓ Empiric Validity: Pearson's Correlation ✓ Inter-rater Reliability	× Entity-Level Reliability × Measure Information Form
MUC2023-175	Facility Commitment to Health Equity	✓ MERIT Submission Form ✓ Peer-Reviewed Literature	× Entity-level Reliability × Measure Information Form × Face or Empiric Validity
MUC2023-176	Hospital Commitment to Health Equity	✓ MERIT Submission Form	× Reliability

MUC ID	Measure Title	Information Reviewed	Information Not Available
		✓ Peer-Reviewed Literature	× Measure Information Form × Face or Empiric Validity
MUC2023-181	30-Day Risk-Standardized All-Cause Emergency Department Visit Following an Inpatient Psychiatric Facility Discharge (IPF ED Visit measure)	✓ Measure Information Form ✓ Peer-Reviewed Literature ✓ MERIT Submission Form ✓ Reliability: Random Split-Half Correlation ✓ Empiric Validity: Spearman Rank-Order Correlation; Known-Group Validity	--
MUC2023-188	Patient Safety Structural Measure	✓ MERIT Submission Form ✓ Measure Information Form ✓ Systematic Reviews; Grey Literature ✓ Face Validity	× Reliability × Empiric Validity
MUC2023-196	Age Friendly Hospital Measure	✓ MERIT Submission Form ✓ Peer-Reviewed Systematic Reviews ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Modified Delphi Method (modified version of the RAND-UCLA Appropriateness Methodology)	× Measure Information Form
MUC2023-199	Connection to Community Service Provider	✓ Peer-Reviewed Literature ✓ MERIT Submission Form ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Adjusted Odds Ratio ✓ Face Validity	× Measure Information Form

MUC ID	Measure Title	Information Reviewed	Information Not Available
MUC2023-210	Resolution of At Least 1 Health-Related Social Need	✓ Peer-Reviewed Literature ✓ MERIT Submission Form ✓ Clinical Guidelines ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Adjusted Odds Ratio ✓ Face Validity	× Measure Information Form
MUC2023-219	Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio	✓ MERIT Submission Form ✓ Clinical Guidelines; Empirical Data ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Spearman Correlation coefficient	× Measure Information Form
MUC2023-220	Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio	✓ MERIT Submission Form ✓ Clinical Guidelines; Empirical Data ✓ Reliability: Signal-to-Noise ✓ Empiric Validity: Spearman Correlation coefficient	× Measure Information Form

3. Measures by CMS Program

Measures marked with an asterisk * are under consideration for two or more CMS programs.

3.1 MUC2023-048 Hospital Harm - Falls with Injury*

Description: This ratio measure assesses the number of inpatient hospitalizations where at least one fall with a major or moderate injury occurs among the total qualifying inpatient hospital days for patients aged 18 years and older.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Electronic Health Record

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Hospital Harm - Falls with Injury measure into the Hospital Inpatient Quality Reporting (HIQR) program and the Promoting Interoperability (PI) measure sets. This new all-payer, risk-adjusted eCQM measure assesses the number of inpatient hospitalizations where at least one fall with a major or moderate injury occurs among the total qualifying inpatient hospital days for patients aged 18 years and older. Inpatient falls are among the most common incidents reported in hospitals and can increase length of stay and patient costs. This patient safety measure brings value to CMS quality program as it enables organizations to track and trend the number and rate of falls with major and moderate injuries to assess and improve fall intervention efforts over time and compare their performance with that of other organizations. Falls are a significant patient safety concern, and currently there are no eCQMs that focus on acute care inpatient falls with major or moderate injury. This measure would fill that gap. This measure has been submitted to the Fall 2023 Patient Safety Cycle for CBE endorsement. It is the sixth in a series of patient safety eCQM measures that CMS intends to create to strengthen our patient safety electronic quality measure portfolio.

Table 3.1.1. MUC2023-048 Measure Information

CMS MERIT Submission Information MUC2023-048	Description
Measure name	Hospital Harm - Falls with Injury
MUC ID	MUC2023-048
Cascade priority	Safety
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	American Institutes for Research
Program submitted to	Hospital Inpatient Quality Reporting Program; Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs)
Committee assigned to	Hospital Committee
Related measures in the program	Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay; LS) (CMIT #01299, #02586, #03493, and #04053) is used in the Long-Term Care Hospital Quality Reporting, Skilled Nursing Facility Quality Reporting, Long-Term Care Hospital Compare, Inpatient Rehabilitation Facility Quality Reporting, Inpatient Rehabilitation Facility Compare, Home Health Quality Reporting, Nursing Home Compare, and Nursing Home Quality Initiative. Patient Fall (CMIT #00933) is used in the Ambulatory Surgical Center Quality Reporting program.
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	New measure never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program
Is the measure currently used in a CMS program?	N/A
If previously used, please describe the history of the measure in CMS program	New measure never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Submitted for Fall 2023 cycle
CBE endorsement number if applicable	4120e
History of endorsement	N/A
Path to endorsement	Anticipated CDP endorsement review in 2023
Measure Specification Details	

CMS MERIT Submission Information MUC2023-048	Description
Measure description	This ratio measure assesses the number of inpatient hospitalizations where at least one fall with a major or moderate injury occurs among the total qualifying inpatient hospital days for patients aged 18 years and older.
Data source	Electronic Health Record
Level of analysis	Facility
Numerator	Inpatient hospitalizations where the patient has a fall that results in moderate or major injury. The diagnosis of a fall and of a moderate or major injury must not be present on admission. Measure observation associated with the numerator: The total number of inpatient hospitalizations where a fall with moderate or major injury occurred, across all eligible encounters.
Denominator	Inpatient hospitalizations for patients aged 18 and older with a length of stay less than or equal to 120 days that ends during the measurement period. Measure observation associated with the denominator: The total number of eligible days across all encounters which match the initial population/denominator criteria.
Numerator exclusions	N/A
Denominator exclusions	Inpatient hospitalizations where the patient has a fall diagnosis present on admission.
Denominator exceptions	N/A
Risk adjustment	Yes
Development status	Fully Developed
If not fully developed, development stage	N/A
Target population	All Payer
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	Yes
If eCQM, what is the Measure Authoring Tool (MAT) number?	CMS1017
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	Yes

Table 3.1.2. MUC2023-048 Hospital Harm – Falls with Injury Measure Evaluation

MUC2023-048 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Despite reductions in inpatient falls with injuries rates in recent years reported by AHRQ, the rate of inpatient falls resulting in injury or death remain high in the United States. It has been estimated that there are 700,000-1,000,000 inpatient falls in the U.S. annually, with more than one-third resulting in injury and up to 11,000 resulting in patient death.[2,3,4]	--	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Testing results indicate an overall 99.29% agreement across all measures' data elements in 12 hospitals representing three different hospital systems. Specifically, agreement between electronic health record data and manual expert abstraction was 99.62% for the overall denominator and 97.70% for the overall numerator. The lowest critical data element was in the numerator at 88.6% agreement: Patient had documentation of a fall during the encounter PLUS an ICD-10-CM diagnosis of major or moderate injury indicating not present-on-admission.	Testing on 12 sites with Epic (3) and Allscripts (9) EHR systems.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Measure is an eCQM (feasibility scorecard and Bonnie testing submitted). All hospital sites confirmed that the data elements used in the measure are captured within the EHR in a structured and codified manner either using nationally accepted terminology standards or local system codes that could be easily mapped. Therefore, workflow modifications indicated via scorecard are only for hospitals not currently using	Testing on 12 sites with Epic (3) and Allscripts (9) EHR systems. Feasibility scorecard indicates 2 out of 36 data elements at one of 13 sites tested for feasibility would require a workflow change (inpatient fall occurring during hospitalization and fall-related injury).	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.

[2] AHRQ (2019). Patient Safety Primer: Falls. Retrieved July 24, 2019, from AHRQ PSNet website: https://psnet.ahrq.gov/primers/primer/40/Falls
[3] Currie, L. (2008). Fall and Injury Prevention. In E. Hughes RG (Ed.), Patient Safety and Quality: An Evidence-Based Handbook for Nurses (pp. 195–250). Rockville: Agency for Healthcare Research and Quality. https://members.nursingquality.org/NDNQIPortal/Documents/General/Guidelines%20-%20PatientFalls.pdf
[4] National Database for Nursing Quality Indicators (2020). Guidelines for Data Collection and Submission Patient Falls Indicator. Press Ganey. https://members.nursingquality.org/NDNQIPortal/Documents/General/Guidelines%20-%20PatientFalls.pdf

MUC2023-048 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	available structured fields to capture a fall that occurred during hospitalization.		
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Risk-adjusted performance scores: minimum 0.0; 10th, 0.038; median, 0.053; 90th, 0.177; max, 0.258; mean 0.08; SD 0.068. Sixteen of 16 (100%) TEP members voted "yes" that the measured outcome (rate of in hospital falls resulting in major or moderate injury) was important to measure and can improve care for patients. Fourteen of 16 (88%) TEP members voted "yes" that the measure's performance scores provide an accurate reflection of hospital-level quality, and scores resulting from the measure can be used to distinguish good from poor hospital-level quality related to hospital-acquired falls with major or moderate injury. Social disparities analysis: Hispanic patients have significantly lower risk of fall with injury (OR=0.36; 95% CI, 0.10-0.91) than non-Hispanic patients. Black patients (OR=0.48; 36; 95% CI, 0.24-0.88) and patients of "other" race (OR=0.47; 95% CI, 0.23-0.89) have significantly lower risk of fall with injury than patients of White or "unknown" race. Risk of fall with injury is unrelated to Medicaid or uninsured status (OR=0.99), or dual eligibility among Medicare beneficiaries.	Racial/ethnic differences are likely to reflect known variation in the prevalence of osteoporosis, as developers found very few false negative cases.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Signal-to-noise reliability testing at the facility level (n=12), showed that 85-90% of entities may have reliability above 0.6.	Small number of entities were used for reliability calculation.	Most or all entities have reliability above the threshold (0.60) *within* the quality program population.

MUC2023-048 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	There are medical units with persistently low and persistently high fall rates, suggesting that disparities in care exist between hospitals.[5] One study of 800 medical units in 470 hospitals found that 87% of variation in 24-month fall rates was due to between-unit differences, and with the exception of patient days, low- and high-fall units did not differ on nurse staffing or any other unit or hospital characteristic variable. This suggests that there remains room for improvement in units with high fall rates. The measure developer identified several clinical practice guidelines that provide recommendations for preventing falls: 1) Fall prevention in hospitals and nursing homes: Clinical practice guideline:[6] Strong recommendations include patient education, medication review, adaptation of environment, and exercises. 2) The National Institute for Health and Care Excellence.[7] 3) Registered Nurses' Association of Ontario.[8] 4) American College of Surgeons National Surgical Quality Improvement Program / American Geriatrics Society.[9] 5) World Falls Guidelines Task Force:[10] A1 grades for gate speed assessment, cardiovascular	--	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

[5] Staggs, V. S., Mion, L. C., & Shorr, R. I. (2015). Consistent differences in medical unit fall rates: Implications for research and practice. Journal of the American Geriatrics Society, 63(5), 983–987. https://doi.org/10.1111/jgs.13387
[6] Schoberer, D., Breimaier, H. E., Zuschnegg, J., Findling, T., Schaffer, S., & Archan, T. (2022). Fall prevention in hospitals and nursing homes: Clinical practice guideline. *Worldviews on Evidence-based Nursing, 19*(2), 86–93. https://doi.org/10.1111/wvn.12571
[7] National Institute for Health and Care Excellence. (2013). Falls in older people: assessing risk and prevention. NICE https://www.nice.org.uk/guidance/cg161
[8] Registered Nurses' Association of Ontario. (2017). Preventing Falls and Reducing Injury from Falls (4th ed.). Toronto, ON: Registered Nurses' Association of Ontario.
[9] Mohanty, S., Rosenthal, R. A., Russell, M. M., Neuman, M. D., Ko, C. Y., & Esnaola, N. F. (2016). Optimal perioperative management of the geriatric patient: a best practices guideline from the American College of Surgeons NSQIP and the American Geriatrics Society. *Journal of the American College of Surgeons, 222*(5), 930-947. doi: 10.1016/j.jamcollsurg.2015.12.026
[10] Montero-Odasso, M., Van Der Velde, N., Martin, F. C., Petrovic, M., Tan, M. P., Ryg, J., ... & Masud, T. (2022). World guidelines for falls prevention and management for older adults: a global initiative. *Age and Ageing, 51*(9), 1–36. https://doi.org/10.1093/ageing/afac205

MUC2023-048 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	assessment for unexplained falls, management of orthostatic hypotension, and tailored patient education Fifteen of 16 (94%) TEP members voted "yes" that measure specifications were precise and that it appears to measure what it is supposed to (i.e., face validity). One individual voted "no" due to disagreeing with the need for risk adjustment.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Developers present a conceptual model for adjusting for demographic, clinical, and behavioral risk factors for falls with major injury. The risk model has discrimination with a c statistic (area under the receiver operating characteristic curve) of 0.852, where 0.5 represents an uninformative model and 1.0 represents a model that explains outcomes perfectly, with no variation due to quality of care. The Brier score is suitably close to zero at 0.00044. Calibration plots are uninterpretable due to the rarity of the event, but we do not reject the null hypothesis of goodness of fit (p=0.052), and predicted risks across patients range from 0.02/1000 to 59.5/1000, with an interquartile range of 0.09/1000 to 0.42/1000.	One out of 16 TEP members questioned the need for risk adjustment	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Several organizations have compiled and disseminated clinical practice guidelines, especially the World Falls Guideline (WFG) Task Force Clinical Practice Guideline. Quality improvement action model might include monitoring (data collection of fall incidents, causes, outcomes), regular review, and continuous improvement based on feedback from staff, patients, and data.	The measure developer identified reduced patient mobilization as a possible unintended consequence of this measure. While reduced patient mobilization may decrease a patient's exposure to the risk of falling, it can have other adverse patient outcomes including increased risk of pressure injury, functional decline, and venous thromboembolism.	There is an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-048 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Quality improvement resources might include clinical guidelines, training materials, assessment tools (e.g., Morse Fall Scale), educational resources for families, alarm systems and sensors).	There may be a lack of access to technological solutions, collaboration opportunities, feedback systems, consultation with specialists, and continuing education.	

MUC2023-048 Measure Reliability

The performance score is a risk-adjusted rate of patients that experience a fall with injury.

The measure report indicates a median reliability of 0.826 calculated using the ICC method across 12 hospitals.

Estimated decile table:

In Table 3.1.3 reliability deciles are estimated based on the reported median, minimum, maximum, and quartiles. This table was created to provide reviewers with a more standardized format to assess reliability.

Table 3.1.3. MUC2023-048 Mean Reliability (by Reliability Decile)

Mean	SD	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	IQR
0.84	0.07	0.20	0.43	0.74	0.75	0.77	0.82	0.83	0.89	0.89	0.90	0.95	0.95	0.15

Interpretation:

The reported median reliability is 0.826. Based on the “plug-in” estimation of entity reliability from the ICC, entity reliability is directly related to the number of encounters. About 10-15% of entities may have reliability below 0.6.

3.2 MUC2023-049 Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications (Failure-to-Rescue)

Description: Percentage of surgical inpatients who experienced a complication and then died within 30-days from the date of their first "operating room" procedure.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Claims data - Medicare inpatient claims data linked to the Medicare beneficiary status file to establish the verified date of death (if applicable).

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications measure, also known as Failure-to-Rescue, into the Hospital Inpatient Quality Reporting program measure sets. This risk-adjusted, electronic claims-based measure assesses the percentage of surgical inpatients who experienced a complication and then died within 30 days from the date of their first operating room procedure. This measure has been redesigned and tested to replace the Patient Safety Indicator 04 (PSI 04) Death Rate among Surgical Inpatients with Serious Treatable Complications measure in the HIQR program. This redesigned measure is risk adjusted for patient-level demographics such as age, sex and gender, severity of illness, comorbidities, reason for admission/operation (based on MS-DRGs and MDCs), transfer status, COVID-19 present on admission (POA), and other POA complications when applicable. While this measure is like the PSI-04 measure, its major differences are that it captures all deaths of denominator-eligible patients within 30 days of the first qualifying operating room procedure, regardless of site, and it limits the denominator to patients in general surgical, vascular, and orthopedic MS-DRGs. It also excludes patients with procedures that followed rather than preceded complications. This respecified measure was created in direct response to stakeholder concerns and is one of the measures created by CMS to really reinforce our commitment to patient safety. The Failure-to-Resue measure was submitted for the Fall 2023 Patient Safety CBE Cycle for endorsement.

Table 3.2.1. MUC2023-049 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-049	Description
Measure name	Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications (Failure-to-Rescue)
MUC ID	MUC2023-049

CMS MERIT Submission Information MUC2023-049	Description
Cascade priority	Safety
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	American Institutes for Research (AIR)
Program submitted to	Hospital Inpatient Quality Reporting Program (HIQR)
Committee assigned to	Hospital Committee
Related measures in the program	00134-02-C-HIQR Death Rate among Surgical Inpatients with Serious Treatable Complications (CMS PSI 04)
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted as 1368 (2012) in 2012 to the Hospital-Acquired Condition Payment Reduction Program (ACA 3008) and reviewed by the Hospital Workgroup leading to a recommendation of "do not support." The measure was also submitted as E0351 (2014) to the Hospital Value-Based Purchasing Program and was reviewed by the Hospital Workgroup leading to a recommendation to prioritize the measure for inclusion in HVBP. MAP reiterated its desire to see additional outcome measures in the HVBP measure set. Noting that measures in the HVBP program must be drawn from the IQR measure set, MAP identified current IQR measures that should be prioritized for inclusion in the HVBP program as potential ways to fill gaps in the program, including PSI 04.
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	Inpatient Quality Reporting (2009-Present)
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Submitted for Fall 2023 cycle
CBE endorsement number if applicable	4125
History of endorsement	Not Endorsed
Path to endorsement	Anticipated CBE endorsement review in 2023
Measure specification details	
Measure description	Percentage of surgical inpatients who experienced a complication and then died within 30-days from the date of their first "operating room" procedure.

CMS MERIT Submission Information MUC2023-049	Description
	Failure-to-rescue is defined as the probability of death given a postoperative complication.
Data source	Claims data - Medicare inpatient claims data linked to the Medicare beneficiary status file to establish the verified date of death
Level of analysis	Facility
Numerator	Patients who died within 30 days from the date of their first “operating room” procedure, regardless of site of death.
Denominator	Patients aged 18 years and older admitted for certain procedures in the General Surgery, Orthopedic, or Cardiovascular Medicare Severity Diagnosis Related Groups (MS-DRGs) who were enrolled in the Medicare program and had a documented complication that was not present on admission. Documented complications include: cardiac events, cardiac emergencies, congestive heart failure, hypotension/shock/hypovolemia, pulmonary embolus, deep vein thrombosis, phlebitis, cerebrovascular accident (CVA)/stroke, transient ischemic attack (TIA), coma, seizure, psychosis, nervous system complications, pneumonia-aspiration, pneumonia-other, pneumothorax/effusion, respiratory compromise, bronchospasm, internal organ damage, perforation, peritonitis, GI bleed and blood loss, sepsis, deep wound infection/wound complication, renal dysfunction, gangrene/amputation, intestinal obstruction, return to surgery, decubitus ulcer, orthopedic complication, hepatitis/jaundice, pancreatitis, necrosis of the bone (thermal or aseptic), osteomyelitis, disseminated intravascular coagulopathy (DIC), pyelonephritis, or post-surgical complication.
Numerator exclusions	N/A
Denominator exclusions	• Patients aged >90 years • Do not resuscitate (DNR) status present on admission • Transferred from hospice • Discharged against medical advice • Missing or invalid key data elements (age, sex, principal diagnosis, MS-DRG, discharge year/quarter) • Contradictory death information (reported date of death before admit date, before discharge date when patient was reportedly discharged alive, discharge disposition reported as died but enrollee has subsequent claims) • No qualifying “operating room” procedure • First or only qualifying “operating room” procedure was outside appropriate time window for that claim

CMS MERIT Submission Information MUC2023-049	Description
	• Only qualifying postoperative complication was also present on admission.
Denominator exceptions	N/A
Risk adjustment	Patient-level demographics; Patient-level health status & clinical conditions
Development status	Fully Developed
If not fully developed, development stage	N/A
Target population	Medicare Fee for Service, Medicare Advantage
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.2.2. MUC2023-049 Thirty-day Risk-Standardized Death Rate among Surgical Inpatients with Complications (Failure-to-Rescue) Measure Evaluation

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Systematic reviews: MERIT submission provides citation that identifies areas of intervention with specific recommendations concerning: 1. staffing levels and education; 2. detection, early warning signs (EWS) systems and checklists; 3. surveillance, communication, and electronic monitoring; 4. medical emergency (MET) and rapid response	Developers recognize a potential for delayed withdrawal of treatment from terminally ill patients during hospital stays,[15] as it is with other 30-day mortality measures. However, the magnitude of these purported effects has generally been undetectable,	The study population is the same as the target quality program population.

[15] Mehtsun, W. T., Zheng, J., Orav, E. J., Lillemoe, K. D., & Jha, A. K. (2017). Unintended consequences of the 30-day mortality metric: fact or fiction. *Annals of Surgery, 266*(6), 962–967. https://doi.org/10.1097/SLA.0000000000002043

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	teams (RRT); 5. relaying information about complications; 6. reacting to a patient in a good time with the correct evidence-based management; 7. appropriate resource should be in place to deal with FTR.[11] MERIT submission provides citations to two systematic reviews identifying factors affecting FTR such as hospital and patient characteristics, factors affecting escalation of care,[12] and Rapid Response Teams.[13] Non-systematic review: MERIT submission provides citation to literature review demonstrating the impact of hospital (higher technology, higher volume, dedicated emergency surgeon, ICU and higher nursing ratios) and patient (age, frailty factor, trauma and insurance status) characteristics on FTR outcomes.[14]	notwithstanding occasional anecdotes describing unethical provider behavior.[16]	
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The measure developer assessed construct validity by comparing failure-to-rescue rates in hospitals that differed in nurse staffing and nursing skill mix, teaching status and resident-to-bed ratio, and hospital location (urban/rural). Relative to hospitals with the lowest nurse staffing, hospitals with intermediate nurse staffing had an overall rate ratio of 0.98, and hospitals with the highest nurse staffing had an overall rate ratio of 0.84 ($p<0.001$). Similar results were found for nursing skill mix.	Exclusion: aged 90 years and older (explanation: the clinical concept of "rescue" may not apply to patients over 89 years of age). Exclusion: do-not-resuscitate, transferred from hospice (explanation: the clinical concept of "rescue" may not apply).	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[11] Burke, J. R., Downey, C., & Almoudaris, A. M. (2022). Failure to rescue deteriorating patients: a systematic review of root causes and improvement strategies. *Journal of Patient Safety, 18*(1), e140–e1552.
[12] Johnston, M. J., Arora, S., King, D., Bouras, G., Almoudaris, A. M., Davis, R., & Darzi, A. (2015). A systematic review to identify the factors that affect failure to rescue and escalation of care in surgery. *Surgery, 157*(4), 752-763. https://doi.org/10.1016/j.surg.2014.10.017
[13] Hall, K. K., Lim, A., & Gale, B. (2020). The use of rapid response teams to reduce failure to rescue events: a systematic review. *Journal of Patient Safety, 16*(3S Suppl 1), S3–S7. https://doi.org/10.1097/PTS.0000000000000748
[14] Hatchimonji, J. S., Kaufman, E. J., Sharoky, C. E., Ma, L., Garcia Whitlock, A. E., & Holena, D. N. (2019). Failure to rescue in surgical patients: A review for acute care surgeons. *The Journal of Trauma and Acute Care Surgery, 87*(3), 699–706. https://doi.org/10.1097/TA.0000000000002365
[16] Span P. (2015, March 2). A surgery standard under fire. *New York Times.* https://www.nytimes.com/2015/03/03/health/a-30-day-surgical-standard-is-under-scrutiny.html

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
	Adopted the same definition of "operating room" procedures that is used in both AHRQ v2022 PSI software and CMS v13 PSI software.	Some of these OR procedures are more commonly performed in specialized procedural suites such as interventional radiology and interventional vascular laboratories.	
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Data elements derived from administrative claims and enrollment databases.		The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Risk-adjusted performance scores (n=2,055 facilities): minimum 0; 25th 29.33; median 43.48; 75th 60.95; max 341.71; mean 46.62. TEP: Nine out of 10 agreed that implementation of this measure, as specified by the development team, in hospital inpatient quality reporting programs (in place of current PSI 04), is likely to lead to improved quality of care by reducing the frequency of failure-to-rescue.		All of the performance improvements to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Signal-to-noise reliability at the facility level (n=2,055), with about 45% of sites at or above 0.60 (min 0.231; 25th 0.388; median 0.568; 75th 0.738; max 0.793; mean 0.704)	About 55% of facilities may have reliability below 0.6.	Most or all entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure?	Empiric validity: Known groups (construct) validity was assessed using hospital-specific information on nurse staffing and nursing skill mix, teaching status and resident-to-bed ratio, and hospital location (urban/rural). Full-time equivalent nurse-to-bed ratio	This measure is an expansion of the population captured under the Patient Safety Index 04 measure to include patients with lower risk of death. One TEP member voiced concern about the application of evidence to	There is an association between the entity and the measure focus *within* the quality program population.

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(Context of Use)	was classified as <1; 1-2; or 2. Relative to the 496 hospitals with the lowest nurse staffing, the 1,266 hospitals with intermediate nurse staffing had an overall rate ratio of 0.98, and the 445 hospitals with the highest nurse staffing had an overall rate ratio of 0.84 ($p<0.001$). Similar results were found for nursing skill mix; 872 hospitals with the highest ratios of RN-to-total nurse staffing had an overall rate ratio of 0.83 ($p<0.001$), compared with the 328 hospitals with the lowest ratios. Empiric validity: Convergent validity was assessed using other measures of hospital quality that are used in federal programs, focusing on measures that do not cover postoperative mortality. Of note, the Spearman rank correlation coefficient between this measure and the 30-day hospital-wide unplanned readmission measure was 0.229 ($p<0.001$). The measure developer identified the Spearman rank correlation coefficients between the proposed specifications and readmission/mortality measures. Identified correlations appear below. Readmission Measures: Acute Myocardial Infarction (AMI) 0.106; Coronary Artery Bypass (CABG) 0.183; COPD 0.103; Heart Failure (HF) 0.143; Hip/Knee 0.140; Hospital-wide (HW) 0.229; Pneumonia (PN) 0.140. Mortality measures: AMI 0.175; CABG 0.239; COPD 0.171; HF 0.106; PN 0.213; Stroke 0.085	the proposed expansion of the target population of surgical patient. The measure developer asserts patients included in this measure better represent “typical” surgical patients undergoing bariatric surgery, orthopedic surgery, cancer surgery, colorectal surgery, etc. They assert that including these patients in the measure population allows the measure to focus on a shift from mild to severe complications.	There is clear articulation of the way an entity may improve performance on the measure focus *within* the quality program population.

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Empiric validity: Spearman rank correlation coefficients association with complications for hip/knee replacement (0.093). One publication showed hospital factors including technology, teaching status, increased nurse-to-patient ratios, improved skill mix, and closed ICUs may help reduce FTR rates.[17] Guideline: The NICE provides guidance via clinical practice recommendations for recognizing and responding to deterioration. This guideline covers how patients in hospital should be monitored to identify those whose health may become worse suddenly and the care they should receive. It aims to reduce the risk of patients needing to stay longer in hospital, not recovering fully or dying.[18] Grey literature: The Joint Commission R3 report provides guidance via clinical practice recommendations for resuscitation standards for hospitals. Effective January 1, 2022, new and revised requirements related to resuscitation care became applicable to Joint Commission-accredited hospitals and critical access hospitals (CAHs). The requirements aim to strengthen resuscitation and post-resuscitation care processes in hospitals and CAHs by bringing the standards in closer alignment with contemporary guidelines and evidence.[19]		

[17] Lafonte, M., Cai, J., & Lissauer, M. E. (2019). Failure to rescue in the surgical patient: a review. *Current Opinion in Critical Care, 25*(6), 706–711.
[18] National Institute for Health and Care Excellence (2007). Acutely ill adults in hospital: recognizing and responding to deterioration (Clinical guideline CG50). https://www.nice.org.uk/guidance/cg50
[19] The Joint Commission (2021, June 18). Resuscitation standards for hospitals. *R3 Report*. https://www.jointcommission.org/-/media/tjc/documents/standards/r3-reports/r3-report_resuscitation_hap_final_.pdf

MUC2023-049 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Risk adjusted for person factors: age, severity of illness, comorbidities, reason for admission, complications (pre-operative), COVID-19 present on admission, transfer status Performance metrics: discrimination (C-statistic of 0.818 relative to 0.5; AUPRC of 0.184 relative to 0.043); calibration (goodness-of-fit; reject null hypothesis). The analysis suggests overestimation of risk among low-risk patients in the bottom five deciles but very accurate estimation among high-risk patients in the top five deciles.	Patient functional status (e.g., frailty) and social network characteristics may be associated with postoperative outcomes, including death within 30 days of surgery. However, these measures are not available from CMS' Medicare claims data, and thus cannot be used in any 30-day hospital outcome measures. Frailty is proxied by available risk factors, including age, chronic comorbidities, and complications present on admission. The magnitude and direction of resulting “omitted variables” bias is uncertain, but this bias is certainly smaller than with the PSI 04 measure in current use (which will be retired). The proposed measure has a less heterogenous denominator specification, and it incorporates more sophisticated risk adjustment using two-way interactions instead of stratification to account for variation in risk (MERIT).	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	TEP: Nine out of 10 agreed that performance on this risk-standardized measure of failure-to-rescue (30-day mortality among surgical inpatients with complications) provides a representation of relevant quality in a facility. Entities: Five out of five agreed that the proposed risk-standardized measure of failure-to-rescue (30-day mortality among surgical inpatients with complications) is easy to understand AND may be useful for decision-making.		There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

MUC2023-049 Measure Reliability

The performance score is a risk standardized rate.

The measure report indicates a median signal-to-noise reliability of 0.568 based on 2,055 entities. A table by population decile is also included in the supplemental materials.

Decile tables:

Decile tables provide reviewers with a standardized format to assess reliability.

Table 3.2.3 was provided in the data template. Entities are sorted by patient population size, and the average reliability by decile is reported along with the number of entities included in each average. The average population size was calculated by dividing the number of patients by the number of entities.

Table 3.2.3. Reliability (Decile by Denominator – Target Population Size)

MUC2023-049	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Population Size	529	25	77	106	143	194	259	338	453	631	974	2,115	8,099
Mean Score	0.704	0.231	0.257	0.325	0.388	0.467	0.538	0.602	0.670	0.738	0.811	0.886	0.973
Entities	2,055	21	205	206	206	206	205	205	205	206	205	206	1
Total Patients	1,087,624	525	15,853	21,776	29,419	40,024	53,027	69,384	92,901	129,893	199,744	435,603	8,099

Table 3.2.4 contains estimates of the reliability deciles (where entities are sorted by reliability instead of population size as in Table 3.2.3). These values are simply interpolations of the minimum, maximum, median and quartiles for reliability provided in the data template.

Table 3.2.4. Mean Reliability (by Reliability Decile)

Mean	SD	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	IQR
0.704	0.21	0.231	0.25	0.33	0.40	0.47	0.55	0.62	0.69	0.77	0.84	0.91	0.97	0.37

Assumptions:

Table 3.2.4 assumes that the minimum, maximum, median and quartiles for reliability provided in the data template are calculated when entities are sorted by reliability (and not population size).

Interpretation:

The reported median reliability is 0.568. About 55% of entities may have reliability below 0.6.

3.3 MUC2023-050 Hospital Harm - Postoperative Respiratory Failure*

Description: This electronic clinical quality measure (eCQM) assesses the proportion of elective inpatient hospitalizations for patients aged 18 years and older without an obstetrical condition who have a procedure resulting in postoperative respiratory failure (PRF).

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Electronic Health Record

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Hospital Harm – Postoperative Respiratory Failure measure into the Hospital Inpatient Quality Reporting (HIQR) program and the Promoting Interoperability (PI) measure sets. This new eCQM assesses the proportion of elective inpatient hospitalizations for patients aged 18 years and older without an obstetrical condition, who have a procedure resulting in postoperative respiratory failure (PRF). This patient safety measure brings value to CMS quality programs because it would enable organizations to track and trend the number of PRF incidents to assess and improve harm reduction efforts over time and compare their performance with that of other organizations. The eCQM would also be able to identify cases from an all-payer population and would not be dependent upon claims-based ICD-10-CM coded data. PRF is a significant safety concern in post-operative patients and currently there are no eCQMs that focus on PRF in the inpatient setting and this measure would fill that gap. This measure has been submitted to the Fall 2023 Patient Safety Cycle for CBE endorsement. It is the 7th in a series of patient safety eCQM measures that CMS intends to create to strengthen our patient safety electronic quality measure portfolio.

Table 3.3.1. MUC2023-050 Measure Information

CMS MERIT Submission Information MUC2023-050	Description
Measure name	Hospital Harm - Postoperative Respiratory Failure
MUC ID	MUC2023-050
Cascade priority	Safety
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	American Institutes for Research (AIR)

CMS MERIT Submission Information MUC2023-050	Description
Program submitted to	Hospital Inpatient Quality Reporting Program; Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs)
Committee assigned to	Hospital Committee
Related measures in the program	Postoperative Respiratory Failure Rate Patient Safety Indicator 11 (endorsement removed, CBE 0533). Steward AHRQ. Risk-Adjusted Postoperative Prolonged Intubation (Ventilation) (CBE #0129). Steward: The Society of Thoracic Surgeons.
Is this a new measure in this year's MUC list?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program?	N/A
If previously used, please describe the history of the measure in CMS program	New measure. Never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Submitted for Fall 2023 cycle
CBE endorsement number if applicable	4130e
History of endorsement	Not Endorsed
Path to endorsement	Anticipated CDP endorsement review: 2023
Measure specification details	
Measure description	This electronic clinical quality measure (eCQM) assesses the proportion of elective inpatient hospitalizations for patients aged 18 years and older without an obstetrical condition who have a procedure resulting in postoperative respiratory failure (PRF).
Data source	Electronic Health Record
Level of analysis	Facility
Numerator	Elective inpatient hospitalizations for patients with postoperative respiratory failure (PRF) as evidenced by: Criterion A: Mechanical Ventilation (MV) initiated within 30 days after first operating room (OR) procedure, as evidenced by:

CMS MERIT Submission Information MUC2023-050	Description
	A.1. Intubation that occurs outside of a procedural area and within 30 days after the end of the first OR procedure of the encounter or, A.2. MV that occurs outside of a procedural area within 30 days after the end of the first OR procedure of the encounter and is preceded by a period of non-invasive oxygen therapy between the end of the OR procedure and the MV occurrence, and without a subsequent OR procedure between the non-invasive oxygen therapy and the MV occurrence or Criterion B: MV with a duration of more than 48 hours after the first OR procedure, as evidenced by: B.1. Extubation that occurs outside of a procedural area more than 48 hours after the end of an OR procedure and within 30 days after the end of the first OR procedure, and is not preceded by a period of non-invasive oxygen therapy or a subsequent OR procedure between the end of the OR procedure and the extubation occurrence or, B.2 Mechanical ventilation that occurs between 48 and 72 hours after the end of an OR procedure and within 30 days after the end of the first OR procedure and is not preceded by a non-invasive oxygen therapy or a subsequent OR procedure between the end of the OR procedure and the MV occurrence.
Denominator	Elective inpatient hospitalizations that end during the measurement period for patients aged 18 and older without an obstetrical condition and at least one surgical procedure was performed within the first 3 days of the encounter.
Numerator exclusions	N/A
Denominator exclusions	Inpatient hospitalizations for patients: • Who have mechanical ventilation that starts more than one hour prior to the start of the first operating procedure (OR) procedure • With arterial partial pressure of oxygen (PaO2)<50 mmHg within 48 hours or less prior to the start of the first OR procedure • With arterial partial pressure of carbon dioxide (PaCO2)>50 mmHg combined with an arterial pH<7.30 within 48 hours or less prior to the start of the first OR procedure • With a principal diagnosis for acute respiratory failure • With a secondary diagnosis for acute respiratory failure present on admission • With any diagnosis present on admission for the existence of a tracheostomy • Where a tracheostomy is performed before or on the same day as the first OR • procedure • With any diagnosis for neuromuscular disorder or degenerative neurological disorder

CMS MERIT Submission Information MUC2023-050	Description
	• With any procedure for selected pharyngeal, nasal, oral, facial, or tracheal surgery involving significant risk of airway compromise likely to require prophylactic retention of the endotracheal tube for at least 48 hours
Denominator exceptions	None
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	Yes
If eCQM, what is the Measure Authoring Tool (MAT) number?	1218
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	Yes

Table 3.3.2. MUC2023-050 Hospital Harm - Postoperative Respiratory Failure Measure Evaluation

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Postoperative Respiratory Failure (PRF) is the most common serious postoperative pulmonary complication.	--	The study population is the same as the target quality program population.

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
	[20,21,22,23] PRF is potentially preventable with optimal care.[24,25,26]		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Positive predictive value (PPV) of EHR-export compared with chart review showed an overall denominator result of 99.5% and numerator result of 89.6% (n=621 encounters). The lowest critical data elements were in the numerator: Patient had an intubation that started outside of a procedural area within 30 days after the end of the first operation room (OR) procedure; and patient had mechanical ventilation that started outside of a procedural area within 30 days after the end of the first OR procedure and was preceded by a non-invasive oxygen therapy or subsequent OR procedure (87.0%).	--	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[20] Arozullah, A. M., Daley, J., Henderson, W. G., & Khuri, S. F. (2000). Multifactorial risk index for predicting postoperative respiratory failure in men after major noncardiac surgery. *Annals of Surgery, 232*(2), 242–253. https://doi.org/10.1097/00000658-200008000-00015
[21] Canet, J., Sabate, S., Mazo, V., Gallart, L., De Abreu, M. G., Belda, J., Langeron, O., Hoeft, A., & Pelosi, P. (2015). Development and validation of a score to predict postoperative respiratory failure in a multicenter European cohort: a prospective, observational study. *European Journal of Anesthesiology, 32*(7), 458-470.
[22] Gupta, H., Gupta, P. K., Fang, X., Miller, W. J., Cemaj, S., Forse, R. A., & Morrow, L. E. (2011). Development and validation of a risk calculator predicting postoperative respiratory failure. *Chest, 140*(5), 1207–1215.
[23] Kor, D. J., Lingineni, R. K., Gajic, O., Park, P. K., Blum, J. M., Hou, P. C., Hoth, J. J., Anderson, H. L., 3rd, Bajwa, E. K., Bartz, R. R., Adesanya, A., Festic, E., Gong, M. N., Carter, R. E., & Talmor, D. S. (2014). Predicting risk of postoperative lung injury in high-risk surgical patients: a multicenter cohort study. *Anesthesiology, 120*(5), 1168–1181.
[24] Encinosa, W. E., & Hellinger, F. J. (2008). The impact of medical errors on ninety-day costs and outcomes: an examination of surgical patients. *Health Services Research, 43*(6), 2067–2085.
[25] Stocking, J. C., Drake, C., Aldrich, J. M., Ong, M. K., Amin, A., Marmor, R. A., Godat, L., Cannesson, M., Gropper, M. A., Romano, P. S., Sandrock, C., Bime, C., Abraham, I., & Utter, G. H. (2022). Outcomes and risk factors for delayed-onset postoperative respiratory failure: a multi-center case-control study by the University of California Critical Care Research Collaborative (UC^{3}RC). *BMC Anesthesiology, 22*(1), 146.
[26] Zrelak, P. A., Utter, G. H., Sadeghi, B., Cuny, J., Baron, R., & Romano, P. S. (2012). Using the Agency for Healthcare Research and Quality patient safety indicators for targeting nursing quality improvement. *Journal of Nursing Care Quality, 27*(2), 99–108.

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Electronic clinical quality measure (eCQM).	While mechanical ventilation was captured in structured fields at all sites, documentation was not standardized (e.g., some information was found in respiratory free text notes). Developer reports that these issues could be addressed during implementation with improved documentation practices.	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use*)	Risk-adjusted performance scores (n=12): min 0.0; median 2.7; mean 3.67; max 16.79; one facility had a risk-adjusted rate significantly below the average (2.54 per 1,000 patients; 95% CI 1.43, 3.65). 15 of 15 TEP members (100%) voted "yes" that the measured outcome was important to measure and can improve care for patients. 12 of 15 TEP members (80%) voted "yes" that the measure's performance scores provide an accurate reflection of hospital-level quality, and scores resulting from the measure Hospital Harm: Postoperative Respiratory Failure (PRF), as specified, can be used to distinguish good from poor hospital-level quality related to hospital-acquired PRF.	No empirical evidence that the benefits exceed the burden. The 3 TEP members who voted "no" that the measure accurately reflected quality felt it was premature to vote "yes" without more data (e.g., from non-teaching hospitals) – developers note that test sites included major teaching and community teaching hospitals.	All the performance improvements to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Signal-to-noise analysis at facility level (n=12): min 0.152; 25th 0.066; mean 0.71; median 0.732; 75th 0.88; max 0.964. About 85-90% of entities may have reliability above 0.6.	A small number of entities was used in reliability calculations.	Most or all entities have reliability above the threshold (0.60) *within* the quality program population.

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	15 of 15 TEP members (100%) voted "yes" that the measure specifications were precise and that it appears to measure what it is supposed to. Empirical studies: The incidence of PRF varies by hospital, with higher reported rates of PRF in nonteaching hospitals than teaching hospitals. Additionally, the odds of developing PRF increased by 6% for each level increase in hospital size from small to large.[27] Guideline: The following guidelines demonstrate an associate between the entity and measure focus: American College of Physicians (ACP) Guidelines[28] were developed to prevent perioperative pulmonary complications patients undergoing non-cardiothoracic surgery. The European Respiratory Society (ERS) / American Thoracic Society (ATS) Guidelines[29] were developed to set recommendations for the use of noninvasive mechanical ventilation in acute respiratory failure. The ACS NSQIP/AGS guidelines[30] were developed to guide optimal perioperative management for geriatric (e.g., age over 65 years) patients, and include recommendations for preventing postoperative pulmonary complications in this population. Perioperative Management of Elderly Patients (PriME): Recommendations from an Italian Intersociety	--	There is an association between the entity and the measure focus *within* the quality program population. There is clear articulation of the way an entity may improve performance on the measure focus *within* the quality program population.

[27] Rahman, M., Neal, D., Fargen, K. M., & Hoh, B. L. (2013). Establishing standard performance measures for adult brain tumor patients: a nationwide inpatient sample database study. *Neuro-Oncology, 15*(11), 1580-1588.
[28] Qaseem, A., Snow, V., Fitterman, N., Hornbake, E. R., Lawrence, V. A., Smetana, G. W., Weiss, K., Owens, D. K., Aronson, M., Barry, P., Casey, D. E., Jr, Cross, J. T., Jr, Fitterman, N., Sherif, K. D., Weiss, K. B., & Clinical Efficacy Assessment Subcommittee of the American College of Physicians (2006). Risk assessment for and strategies to reduce perioperative pulmonary complications for patients undergoing noncardiothoracic surgery: a guideline from the American College of Physicians. *Annals of Internal Medicine, 144*(8), 575–580. https://doi.org/10.7326/0003-4819-144-8-200604180-00008
[29] Rochwerg, B., Brochard, L., Elliott, M. W., Hess, D., Hill, N. S., Nava, S., ... & Raoof, S. (2017). Official ERS/ATS clinical practice guidelines: noninvasive ventilation for acute respiratory failure. European Respiratory Journal, 50(2).
[30] Chow, W. B., Ko, C. Y., Rosenthal, R. A., & Esnaola, N. F. (2012). ACS NSQIP/AGS best practice guidelines: Optimal preoperative assessment of the geriatric surgical patient. *Chicago: American College of Surgeons*.

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
	Consensus[31] focus on surgical outcomes in geriatric patients, and these guidelines were developed through the Perioperative Management of Elderly patients (PriME) project.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	After feature selection with 100-fold cross-validation and testing on the hold-out test set, retained risk factors were weight loss POA, deficiency anemias POA, heart failure POA, diabetes with chronic complications POA, moderate to severe liver disease POA, peripheral vascular disease POA, pulmonary circulation disease POA, valvular disease POA, ASA categories 3 through 5, and lab values for oxygen (partial pressure), leukocytes, albumin, BUN, bilirubin, and pH of arterial blood. Overall model discrimination was assessed by C-statistic. The AUC was 0.826 in the holdout test set (based on least absolute shrinkage and selection operator or LASSO regression) and 0.912 for the final probit model, indicating strong discrimination performance relative to a random classifier with AUC= 0.5. The null hypothesis of perfect calibration is rejected at the $p<0.05$ level (i.e., p=0.049),	The AUPRC was 0.098 in the holdout test set (based on Lasso), indicating poor prediction at the individual patient level but good performance relative to a random classifier with AUPRC=0.0030.	N/A

[31] Aceto, P., Antonelli Incalzi, R., Bettelli, G., Carron, M., Chiumiento, F., Corcione, A., ... & Volpato, S. (2020). Perioperative Management of Elderly patients (PriME): recommendations from an Italian intersociety consensus. *Aging Clinical and Experimental Research*, *32*, 1647-1673.

MUC2023-050 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Clinical guidelines and various risk prediction tools cited above can be used to support quality improvement efforts.[32,33,34,35]	Potential unintended consequences include: (1) Inappropriate or unsafe use of non-invasive positive pressure ventilation (in lieu of invasive mechanical ventilation) to avoid detection by this measure; (2) Excessive use of preventive tracheostomy during the initial OR procedure (to avoid the possible need for re-intubation after endotracheal extubation); (3) Avoidance of offering necessary operating room (OR) procedures for high-risk patients.	There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

MUC2023-050 Measure Reliability

The performance score is a risk-adjusted rate of patients that experience post-operative respiratory failure.

The measure report indicates a median reliability of 0.732 calculated using the ICC method across 12 hospitals.

Estimated decile tables:

Based on the information provided for the performance score and calculated reliability for the 12 entities described in the testing submission, deciles by performance score and reliability (approximated from submission materials) are shown in Tables 3.3.3 and 3.3.4. These tables are created to provide reviewers with a standardized format to assess reliability.

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[32] Arozullah, A. M., Daley, J., Henderson, W. G., & Khuri, S. F. (2000). Multifactorial risk index for predicting postoperative respiratory failure in men after major noncardiac surgery. *Annals of Surgery, 232*(2), 242–253. https://doi.org/10.1097/00000658-200008000-00015

[33] Canet, J., Sabate, S., Mazo, V., Gallart, L., De Abreu, M. G., Belda, J., Langeron, O., Hoeft, A., & Pelosi, P. (2015). Development and validation of a score to predict postoperative respiratory failure in a multicentre European cohort: a prospective, observational study. *European Journal of Anaesthesiology, 32*(7), 458-470.

[34] Gupta, H., Gupta, P. K., Fang, X., Miller, W. J., Cemaj, S., Forse, R. A., & Morrow, L. E. (2011). Development and validation of a risk calculator predicting postoperative respiratory failure. *Chest, 140*(5), 1207–1215.

[35] Kor, D. J., Lingineni, R. K., Gajic, O., Park, P. K., Blum, J. M., Hou, P. C., Hoth, J. J., Anderson, H. L., 3rd, Bajwa, E. K., Bartz, R. R., Adesanya, A., Festic, E., Gong, M. N., Carter, R. E., & Talmor, D. S. (2014). Predicting risk of postoperative lung injury in high-risk surgical patients: a multicenter cohort study. *Anesthesiology, 120*(5), 1168–1181.

For Table 3.3.3, entities are sorted by performance score, and the average score by decile is shown. Average, standard deviation, and minimum and maximum scores are also included.

Table 3.3.3. MUC2023-50 Performance Score Deciles

MUC2023-050	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score	3.67 (4.41)	0	0	1.79	1.84	2.54	2.69	2.75	3.10	4.35	5.45	16.79	16.79
Entities	12	2	2	1	1	1	1	2	1	1	1	1	1

Table 3.3.4. MUC2023-50 Mean Reliability (by Reliability Decile)

Mean	SD	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	IQR
0.72	0.23	0.15	0.30	0.61	0.68	0.71	0.72	0.79	0.87	0.92	0.93	0.97	0.97	0.26

Interpretation:

The reported median reliability is 0.732. Based on the “plug-in” estimation of entity reliability from the ICC, entity reliability is directly related to the number of encounters. About 10-15% of entities may have reliability below 0.6.

3.4 MUC2023-114 Global Malnutrition Composite Score*

Description: This measure assesses the percentage of hospitalizations for adults aged 18 years and older at the start of the measurement period with a length of stay equal to or greater than 24 hours who received optimal malnutrition care during the current inpatient hospitalization where care performed was appropriate to the patient's level of malnutrition risk and severity.

Measure Type: Intermediate Outcome

Level of Analysis: Facility

Data Source(s): Electronic Health Record

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the modified measure Global Malnutrition Composite Score (GMCS) to the Hospital Inpatient Quality Reporting Program (HIQR) and Promoting Interoperability (PI) measure sets in support of an agency goals of Seamless Care Coordination, Person-Centered Care, and Equity. This electronic clinical quality measure (eCQM) has been modified to expand the cohort to include patients 18 years of age and older. The eCQM currently in the HIQR and PI programs apply only to those admitted patients 65 years of age and older. This eCQM was originally finalized for adoption into the Hospital IQR program in the fiscal year (FY) 2022 Inpatient Prospective Payment System (IPPS) and Long-term Care Hospital (LTCH) Prospective Payment System rule for the calendar year (CY) 2024 reporting period. The current measure is endorsed by the Consensus-Based Entity (CBE #3592e). The measure steward, the Academy of Nutrition and Dietetics, has resubmitted the Global Malnutrition Composite Score measure (eCQM) to MUC 2023 for consideration into the FY 2025 IPPS Rule, with a substantive change in the measure. The measure modification expands the cohort to include patients 18 years and older admitted to the acute care hospital. This expands the current measure population of focus from patients 65 and older. Implementation of this measure ensures a standardized process for risk identification, assessment, diagnosis, and treatment of malnutrition and necessitates a multi-disciplinary care team coordination for the expanded patient population. Evidence demonstrates that implementing a standardized protocol for results in better identification of malnourished patients and subsequent improvements in rates of nutrition intervention for the malnourished. Outcomes studies demonstrate the benefits to patient outcomes, including reduced risk of 30-day readmissions, length of hospital stay, and complications, as well as improved quality of life after hospitalization. This information will further a facility’s opportunity to connect patients more effectively with specialized care or resources after discharge, furthering CMS’s commitment to health equity and related health social needs.

Table 3.4.1. MUC2023-114 Measure Information

CMS MERIT Submission Information MUC2023-114	Description
Measure name	Global Malnutrition Composite Score
MUC ID	MUC2023-114
Cascade priority	Seamless Care Coordination
Measure steward	Academy of Nutrition and Dietetics
Measure developer	Avalere
Program submitted to	Hospital Inpatient Quality Reporting Program; Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs)
Committee assigned to	Hospital Committee
Related measures in the program	None
Is this a new measure in this year's MUC list?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	In 2016, this measure was submitted as four individual measures: MUC16-294, MUC16-296, MUC16-344, and MUC-372 to the Hospital Inpatient Quality Reporting program and was reviewed by the Hospital Workgroup. MAP recommended refining and resubmitting prior to rulemaking because the measure did not receive NQF endorsement through NQF's Health and Well-Being project. MAP also encouraged the measure developer to test the individual malnutrition measures as a composite in an effort to balance the number of measures in the IQR yet fill the gap on malnutrition. In 2020, the measure was re-submitted as a composite measure: MUC20-0032 to the Hospital Inpatient Quality Reporting Program and the Medicare Promoting Interoperability Program for Eligible Hospitals and Critical Access Hospitals (CAHs) and was reviewed by the Hospital Workgroup. MAP offered conditional support for rulemaking pending NQF endorsement of the measure. This measure addresses a clinical topic area not currently addressed by the measures in the Hospital Inpatient Quality Reporting Program (Hospital IQR Program) set. Furthermore, this measure may be considered to address the high-priority Meaningful Measure area to "Promote Effective Communication and Coordination of Care" through the EHR data source and as an eCQM.
Is the measure currently used in a CMS program?	Yes
If previously used, please describe the history of the measure in CMS program	Measure currently used in a CMS program, but the measure is undergoing substantial change
Any other program the measure is in use	CMS986 is not currently in these programs but is finalized for IPPS implementation in Program Year 2024 in the Hospital Inpatient Quality Reporting and Promoting Interoperability (EH-CAH) programs
Is this measure being proposed to meet a statutory requirement?	N/A

CMS MERIT Submission Information MUC2023-114	Description
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE 3592e
History of endorsement	Most recent endorsement: 2020
Path to endorsement	Year of next anticipated CDP endorsement review: 2024
Measure Specification Details	
Measure Description	This measure assesses the percentage of hospitalizations for adults aged 18 years and older at the start of the measurement period with a length of stay equal to or greater than 24 hours who received optimal malnutrition care during the current inpatient hospitalization where care performed was appropriate to the patient's level of malnutrition risk and severity. Malnutrition care best practices recommend that for each hospitalization, adult inpatients are screened for malnutrition risk by a nursing professional, registered dietitian (RD), or registered dietitian nutritionist (RDN); assessed by an RD/RDN to confirm findings of malnutrition risk; and if identified with a “moderate” or “severe” malnutrition status in the current performed malnutrition assessment, receive a current “moderate” or “severe” malnutrition diagnosis by a physician/eligible clinician as defined by CMS, and have a current nutrition care plan performed by an RD/RDN.
Data source	Electronic Health Record
Level of analysis	Facility
Numerator	As a continuous variable measure, this measure construct is called a measure observation, rather than a numerator. This is a multi-score measure with five (5) different measure observations. 1. Measure Observation 1 are “Encounters with Malnutrition Risk Screening and Identified Result” 2. Measure Observation 2 are “Encounter with Nutrition Assessment and Identified Status” 3. Measure Observation 3 are “Encounters with Malnutrition Diagnosis” 4. Measure Observation 4 are “Encounters with Nutrition Care Plan” 5. Measure Observation 5 is the “TotalMalnutritionComponentsScore” which equals the sum of measure observation 1 + measure observation 2 + measure observation 3 + measure observation 4.
Denominator	In a continuous variable measure, this measure construct is called the measure population, rather than the denominator. The measure population for Measure Observations 1, 2, 3, and 4 is “Inpatient hospitalizations during the measurement period with length of stay of 24 hours or more among individuals 18 years of age and older at the start of the measurement period.” The measure population for “Measure Observation TotalMalnutritionCompositeScore as Percentage” equals the “TotalMalnutritionCompositeScore Eligible Denominators.” “TotalMalnutritionCompositeScore Eligible Denominators” are either 1, 2, or 4.

CMS MERIT Submission Information MUC2023-114	Description
	"TotalMalnutritionCompositeScore Eligible Denominators" is always 4 except in the following two instances: 1. If a "Malnutrition Risk Screening" was performed and a "Malnutrition Screening At Risk Result" was not identified, then the "TotalMalnutritionCompositeScore Eligible Denominators" is 1. 2. If a "Nutrition Assessment" was performed and a "Nutritional Status Moderately Malnourished" or "Nutritional Status Severely Malnourished" was not identified, then the "TotalMalnutritionCompositeScore Eligible Denominators" is 2. The "TotalMalnutritionCompositeScore Eligible Denominators" equals 4 if: 1. A "Malnutrition Risk Screening" was performed AND a "Malnutrition Screening At Risk Result" was identified AND a "Nutrition Assessment" was not performed. 2. A "Malnutrition Risk Screening" was not performed. 3. A "Nutrition Assessment Status Moderately Malnourished" OR "Nutrition Assessment Status Severely Malnourished" was identified.
Numerator exclusions	N/A
Denominator exclusions	N/A
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	Inpatient hospitalizations during the measurement period with length of stay of 24 hours or more among individuals 18 years of age and older at the start of the measurement period.
Measure type	Intermediate Outcome
Is the measure a composite or component of a composite?	Yes
Digital Measure Information	
Is this measure an eCQM?	Yes
If eCQM, what is the Measure Authoring Tool (MAT) number?	CMS986
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	Yes

Table 3.4.2. MUC2023-114 Global Malnutrition Composite Score Measure Evaluation

MUC2023-114 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Two research studies associated early nutritional care after risk identification with improved outcomes such as reduced length of stay, reduction in risk readmissions, and cost of care.[36, 37] An additional study of a learning collaborative of US hospitals demonstrated a statistically significant lower risk of 30-day readmission for malnourished patients who had a documented nutrition care plan.[38]	A total of 24 studies of varying quality were included to support the clinical recommendations; two were small, randomized trials (evidence level II), two were nonrandomized cohorts with contemporaneous controls (evidence level III), one was a nonrandomized cohort with historical controls (evidence level IV), and 19 were case series/uncontrolled studies (evidence level V). The body of evidence is a Grade C.[39]	As the study population differs from the target quality program population, limited importance for the selected program population can be extrapolated.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	(N=180) 100% of all critical data elements matched in the comparison between two manual reviewers. Response variable was Medical Diagnosis (2 levels); Predictor variables were Screening Result (3 levels and Assessment Result (3 levels); c-statistic of 0.828. Correlation between the components and outcome of the composite measure with clinical outcomes of patient length of stay (LOS) and 30-day	--	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[36] Lew, C. C. H., Yandell, R., Fraser, R. J., Chua, A. P., Chong, M. F. F., & Miller, M. (2017). Association between malnutrition and clinical outcomes in the intensive care unit: a systematic review. Journal of Parenteral and Enteral Nutrition, 41(5), 744-758.
[37] Meehan, A., Loose, C., Bell, J., Partridge, J., Nelson, J., & Goates, S. (2016). Health System Quality Improvement. Journal of Nursing Care Quality, 31(3), 217-223.
[38] Valladares, A. F., Kilgore, K. M., Partridge, J., Sulo, S., Kerr, K. W., & McCauley, S. (2021). How a malnutrition quality improvement initiative furthers malnutrition measurement and care: results from a hospital learning collaborative. Journal of Parenteral and Enteral Nutrition, 45(2), 366-371.
[39] Mueller, C., Compher, C., Ellen, D. M., & American Society for Parenteral and Enteral Nutrition (ASPEN) Board of Directors. (2011). ASPEN clinical guidelines: nutrition screening, assessment, and intervention in adults. *Journal of Parenteral and Enteral Nutrition, 35*(1), 16-24.

MUC2023-114 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	readmissions; Adjusting for differences in patient characteristics; Significantly predictive of the outcome (p<0.0001). (N=10) TEP agreed expansion of the measure population from aged 65+ to 18+ is an appropriate and necessary modification because as malnutrition is identified in all adult aged populations in the acute care setting and require malnutrition interventions.		
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Measure is an eCQM. Workflow analysis identified no required modifications (N=56); the results were 11.41 for the current and 11.84 for the future state across critical data elements ranging from 2.75 to 3.0.	--	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	In testing submitted by the developer, 2/2 persons found information from the measure (e.g., the measured outcome or process) important to know about AND that it can help improve care for patients in similar situations or with similar conditions. Extensive evidence demonstrates malnutrition gaps by race, ethnicity, education and financial barriers, geography, and other demographic characteristics and social risks (MERIT).	--	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	--	Reliability is not evaluated at the measured entity level.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity:	Guideline: American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) recommends the following: 1. Screening for nutrition risk is suggested	Guideline cited grading: body of evidence grade of C-supported by at least one level II investigation-Small, randomized trials with	There is an association between the entity and the measure focus *within* the quality program population.

MUC2023-114 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	for hospitalized patients (Level V); 2. Nutrition assessment is suggested for all patients who are identified to be at nutrition risk by nutrition screening (Level V); and 3. Nutrition support intervention is recommended for patients identified by screening and assessment as at risk for malnutrition or malnourished. (Level III).[40] A 2019 systematic review examining the relation of nutrition interventions and clinical outcomes included 27 studies, with 19 that addressed the Nutrition Care Process assessed in CMS986.[41] Receipt of nutrition interventions for adults during hospitalization was associated with significantly lower rates of mortality and hospital readmission. In their clinical recommendation publication, the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) recommends the following: 1. Screening for nutrition risk is suggested for hospitalized patients; 2. Nutrition assessment is suggested for all patients who are identified to be at nutrition risk by nutrition screening (Level V); and 3. Nutrition support intervention is recommended for patients identified by screening and assessment as at risk for malnutrition or malnourished. (Level III). Empiric validity: Association with 30-day readmissions; including measure results in incremental improvement in c-statistic from 0.614 to	uncertain results; moderate to high risk of false-positive and/or false-negative error).[69] No explicit articulation of the way an entity may improve performance on the measure focus. Developer acknowledges that the malnutrition status identified during the nutrition assessment component may derive from and correlate with current clinical processes, demographic characteristics, and/or social risk variables. No explanation for association with increased length-of-stay.	There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[40] Mueller, C., Compher, C., Ellen, D. M., & American Society for Parenteral and Enteral Nutrition (ASPEN) Board of Directors. (2011). ASPEN clinical guidelines: nutrition screening, assessment, and intervention in adults. Journal of Parenteral and Enteral Nutrition, 35(1), 16-24.
[41] Gomes, F., Baumgartner, A., Bounoure, L., Bally, M., Deutz, N. E., Greenwald, J. L., Stanga, Z., Mueller, B., & Schuetz, P. (2019). Association of nutritional support with clinical outcomes among medical inpatients who are malnourished or at nutritional risk: an updated systematic review and meta-analysis. *JAMA Network Open, 2*(11), e1915138.

MUC2023-114 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	0.625 ($p<0.01$); relative risk reduction of 24% (21.4% vs. 26.5%, respectively). Empiric validity: Association with length of stay (LOS); including measure results in incremental improvement in adjusted R2 from 0.063 to 0.288 ($p<0.001$); increase in LOS from 9.46 to 6.46 days.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted (not appropriate for this measure).	Persistent gaps in data collection and availability of primary, secondary, and proxy risk variables inhibit testing and analyzing needed to include for conceptual risk model development.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	10/10 entities found the information produced by the performance measure is easy to understand AND useful for decision-making. The MERIT submission includes an eCQM feasibility scorecard. Current total ratings for each measure ranged from 11.41-12 out of 12. Future ratings for each measure ranged from 11.84 to 12 out of 12.	--	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-114 Measure Reliability

Reliability was not analyzed for this measure according to the report provided. The overall mean performance score is provided, but the percentiles and overall standard deviation of the performance score are not provided. Without these details, the performance score and reliability cannot be simulated or assessed for this measure.

3.5 MUC2023-117 Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI)

Description: This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for acute myocardial infarction (AMI).

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI) to the Hospital Readmissions Reduction Program (HRRP). This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for acute myocardial infarction (AMI). The acute care outcomes include 1) emergency department (ED) visits, 2) observation stays (OBSs), and 3) unplanned readmissions. ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. The original measure was originally published on the 2014 MUC list and was originally endorsed by the consensus-based entity (CBE) in 2016. It has been publicly reported since 2017 in the Hospital Inpatient Reporting program (HIQR). The EDAC measure, which is now calculated as a ratio, is returning to the 2023 MUC list for inclusion into HRRP. Excess days in acute care settings can lead to both lower patient experience of care and poor health outcomes. Currently, there is a growing concern of undercounting excess days, which leads to underestimating its true burden to hospitals and patients. The burdens from these excess days are not adequately captured by the current AMI readmission measure in HRRP. CMS seeks to replace the HRRP readmission AMI measure with the EDAC AMI measure, as this measure expands the definition of readmission by including ED visits, OBS stays and unplanned readmission, which gets us closer to truly reflecting the great efforts to meet patients' needs in the acute care settings.

Table 3.5.1. MUC2023-117 Measure Information

CMS MERIT Submission Information MUC2023-117	Description
Measure name	Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI)
MUC ID	MUC2023-117
Cascade priority	Seamless Care Coordination
Measure steward	Centers for Medicare & Medicaid Services

CMS MERIT Submission Information MUC2023-117	Description
Measure Developer	Yale/CORE
Program submitted to	Hospital Readmissions Reduction Program
Committee assigned to	Hospital Committee
Related measures in the program	CBE #0505: Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Acute Myocardial Infarction (AMI) Hospitalization CBE #2880: Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF) CBE #2882: Excess Days in Acute Care (EDAC) After Hospitalization for Pneumonia
Is this a new measure in this year's MUC List?	Developer submitted information during PA development "This measure has been modified from the IQR version and is being submitted as a new measure for HRRP"
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted during MUC year 2014 as MUC14 - X3728. The measure was submitted to HIQR 2014 and reviewed by the MAP Hospital Workgroup and the Coordinating Committee, leading to a supportive recommendation. Additionally, the measure was resubmitted in 2021 as MUC2021-122 to HIQR 2021, where it underwent review by the MAP Hospital Workgroup, Rural Health Workgroup, Health Equity Advisory, and the Coordinating Committee, resulting in a conditional support recommendation pending endorsement by a CBE.
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	Used in Hospital Inpatient Quality Reporting Program 2017-current
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed for AMI
CBE endorsement number if applicable	CBE #2881
History of endorsement	Initial Endorsement: 12/2016
Path to endorsement	Unknown
Measure Specification Details	
Measure Description	This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for acute myocardial infarction (AMI). The acute-care outcomes include 1) ED visits, 2) observation stays (OBSs), and 3) unplanned readmissions. Unplanned readmissions are defined using the planned readmission algorithm (PRA). ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. CMS annually reports the

CMS MERIT Submission Information MUC2023-117	Description
	measure for patients who are 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or Veterans Health Administration (VA) facilities.
Data source	Administrative Data (non-claims); Claims Data
Level of analysis	Facility
Numerator	The outcome of the measure is a count of the number of days the patient spends in acute care within 30 days of discharge from an eligible index AMI hospitalization. We define days in acute care as days spent in an ED, admitted to an observation unit, or admitted as an unplanned readmission for any cause to a short-term acute care hospital, within 30 days from the date of discharge from the index AMI hospitalization.
Denominator	To be included in the measure cohort, patients must meet the following inclusion criteria: 1. Have a principal discharge diagnosis of AMI; 2. Enrolled in Medicare FFS Part A and Part B for the first 12 months prior to the date of admission and enrolled in Part A during the index admission. [For VA beneficiaries hospitalized in VA hospitals, there are no Medicare FFS enrollment requirements. For VA beneficiaries hospitalized in non-VA hospitals, they must be concurrently enrolled in Medicare FFS Part A at the time of the index admission, to be eligible for cohort inclusion, but the 12-month Part A and B enrollment prior to admission is not required.]; 3. Aged 65 or over; 4. Discharged alive from a non-federal short-term acute-care hospital or VA hospital; and, 5. Not transferred to another acute care facility.
Numerator exclusions	N/A
Denominator exclusions	The measure excludes index hospitalizations that meet any of the following exclusion criteria: 1. Without at least 30 days of post-discharge enrollment in Medicare FFS (in the case of patients who are not VA beneficiaries); 2. Discharged against medical advice; 3. Same calendar day discharges; 4. AMI admissions within 30 days of discharge from a prior AMI index admission; 5. With a principal diagnosis code of COVID-19 (ICD-10-CM code U07.1) or with a secondary diagnosis code of COVID-19 coded as POA on the index admission claim.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A

CMS MERIT Submission Information MUC2023-117	Description
Target population	CMS annually reports the measure for patients who are 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or are patients hospitalized in Veterans Health Administration (VA) facilities.
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.5.2 MUC2023-117 Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI) Measure Evaluation

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Studies suggest that appropriate care for AMI during and after the index hospitalization may reduce the risk of subsequent readmission.[42,43,44,45,46] Studies have also reported reductions in emergency department (ED) visit rates for patients with other conditions after implementation of interventions that focused on the inpatient and outpatient settings.[47] Safely transitioning patients from hospital to home requires a complex series of tasks that would be cumbersome to capture individually as process measures: timely and effective communication between providers, prevention of and response to complications, patient education about post-discharge care and self-management, timely follow-up, and more. Suboptimal transitions contribute to a variety of adverse events post-discharge, including ED evaluation, need for observation, and readmission. Measures of unplanned readmission already exist, but there are no current consensus-based entity (CBE)-endorsed measures for emergency	--	The study population is the same as the target quality program population.

[42] Carlhed R, Bojestig M, Peterson A, Aberg C, Garmo H, Lindahl B. (2009). Improved Clinical Outcome After Acute Myocardial Infarction in Hospitals Participating in a Swedish Quality Improvement Initiative. Circulation: Cardiovascular Quality & Outcomes, 2(5), 458-464. https://doi.org/10.1161/CIRCOUTCOMES.108.842146
[43]Carroll, D.L., Rankin, S.H., Cooper, B.A. (2007). The Effects of a Collaborative Peer Advisor/Advanced Practice Nurse Intervention: Cardiac Rehabilitation Participation and Rehospitalization in Older Adults After a Cardiac Event. Journal of Cardiovascular Nursing, 22(4), 313-319. https://doi.org/10.1097/01.jcn.0000278955.44759.73
[44] Young, W., Rewa, G., Goodman, S.G., Jaglal, S.B., Cash, L., Lefkowitz, C., Coyte, P.C. (2003). Evaluation of a Community-based Inner-city Disease Management Program for Postmyocardial Infarction Patients: A Randomized Controlled Trial. Canadian Medical Association Journal, 169(9), 905-910. Retrieved from https://www.cmaj.ca/content/169/9/905.short
[45] Bondestam, E, Breikss, A, Hartford, M. (1995). Effects of Early Rehabilitation on Consumption of Medical Care During the First Year After Acute Myocardial Infarction in Patients > or = 65 Years of Age. American Journal of Cardiology, 75(12), 767-771. https://doi.org/10.1016/S0002-9149(99)80408-1
[46] Ades, P.A., Huang, D., Weaver, S.O. (1992). Cardiac Rehabilitation Participation Predicts Lower Rehospitalization Costs. American Heart Journal, 123(4 Pt 1), 916-921. https://doi.org/10.1016/0002-8703(92)90696-S
[47] Bondestam, E, Breikss, A, Hartford, M. (1995). Effects of Early Rehabilitation on Consumption of Medical Care During the First Year After Acute Myocardial Infarction in Patients > or = 65 Years of Age. American Journal of Cardiology, 75(12), 767-771. https://doi.org/10.1016/S0002-9149(99)80408-1

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	department and observation stay utilization for this condition. It is thus difficult for providers and consumers to gain a complete picture of post-discharge outcomes. Moreover, separately reporting each of these outcomes encourages "gaming," such as re-categorizing readmission stays as observation stays to avoid a readmission outcome. By capturing a range of acute care events that are important to patients, the measure developer asserts this measure can produce a more complete picture of post-discharge outcomes that better informs consumers about care quality and incentivizes global improvement in transitional care.		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Days in acute care from any cause is an adverse event (MERIT) (CBE - a material outcome). Outcomes occurring within 30 days of discharge can be influenced by hospital care. The 30-day time frame is a clinically meaningful period for hospitals to collaborate with their communities to reduce days in acute care (MERIT). Multiple events are counted to capture the full patient experience in the post-discharge period (MERIT).	Entity: Stakeholders have not reviewed the version of the measure being submitted here for 2023, in which two changes have been made: the outcome has been modified from a difference to a ratio, and we have simplified the outcome weighting by assigning rounded times to outcome events (e.g., rounding an ED visit or an observation stay to one full day).	Most persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Medicare Part A Inpatient and Part B Outpatient Claims, Medicare Enrollment Database (EDB), Veterans Health Administration (VA) Data, The American Community Survey.	No explicit articulation of people, processes, or technology required	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance:	Data submitted by the measure developer show variation in performance by hospital. The mean measure score is 1.023 with a standard deviation of	--	Most of the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	0.187. The minimum performance score is 0.599, the 10th percentile score is 0.831, the median performance score is 0.996, the 90th percentile score is 1.247, and the maximum performance score is 2.985. Persons: (2/2 or 100%) agreed "information from the measure is important to know about AND can help improve care for patients in similar situations or with similar conditions" (MERIT). The current process-based performance measures cannot capture all the ways that care within the hospital might influence outcomes. As a result, many stakeholders, including patient organizations, are interested in outcomes measures that allow patients and providers to assess relative outcomes performance among hospitals.[48]		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Reliability was assessed using the split sample approach on a set of 1,805 hospitals. The measure developer provided three citations[49,50,51] for the appropriateness of this approach and reported they interpret the reliability of this measure as adequate in the context of split-sample reliability for a clinical risk-adjusted outcome measure.	The measure report indicates a correlation of 0.402 from a random split-half correlation approach to assessing reliability. Well over 50% of the entities are likely to have reliability below 0.6. It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.

[48] Bratzler, D.W., Nsa W., Houck, P.M. (2007). Performance Measures for Pneumonia: Are They Valuable, and Are Process Measures Adequate. Current Opinion in Infectious Diseases, 20(2), 182-189. https://doi.org/10.1097/QCO.0b013e3280495468
[49] Cruz CO, Meshberg EB, Shofer FS, McCusker CM, Chang AM, Hollander JE. Interrater reliability and accuracy of clinicians and trained research assistants performing prospective data collection in emergency department patients with potential acute coronary syndrome. Ann Emerg Med. 2009 Jul;54(1):1-7.
[50] Hall SF, Groome PA, Streiner DL, Rochon PA. Interrater reliability of measurements of comorbid illness should be reported. J Clin Epidemiol. 2006 Sep;59(9):926-33.
[51] Hand PJ, Haisma JA, Kwan J, Lindley RI, Lamont B, Dennis MS, Wardlaw JM. Interobserver agreement for the bedside clinical assessment of suspected stroke. Stroke. 2006 Mar;37(3):776-80.

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: To demonstrate empiric validity of the updated AMI EDAC measure (ratio of predicted days and expected days) using the new count approach for observation stays and ED visits, we assessed the measure's correlation with the existing, currently implemented AMI EDAC measure (difference of predicted days and expected days). The two measures were calculated on the same set of 3,187 hospitals with at least 25 admissions from July 1, 2019 – June 30, 2022. The correlation between the two measures was 0.98 ($p<0.001$), which is positive and significant. This is in the hypothesized direction as both measures assess the quality of care for AMI (MERIT). Systematic review: Based on 15 high-quality systematic reviews, there is some evidence that some interventions may have a positive impact, particularly those with educational components and those that combine pre-discharge and post-discharge interventions. However, on the whole there is only limited summarized evidence that discharge planning and discharge support interventions have a positive impact on patient status at hospital discharge, on patient functioning after discharge, on health care use after discharge, or on costs.[52] Gray literature: AMI is among the most common principal hospital discharge diagnoses among Medicare beneficiaries, and, in 2013, it was the fifth	No explicit articulation of the way an entity may improve performance on the measure focus. Empirical Validity: the correlation study between the two specified versions of the measure does not address the association between the entity and the measure focus without the presumption that the current CBE-endorsed version is valid (CBE).	There is an association between the entity and the measure focus *within* the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[52] Mistiaen, P., Francke, A.L., Poot, E. (2007). Interventions aimed at reducing problems in adult patients discharged from hospital to home: a systematic metareview. BioMed Central Health Services Research, 7, 47

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	most expensive condition treated in US hospitals, accounting for 3.5% of national health care costs.[53]		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	In updated testing, developers reported on testing risk adjustment for dual eligibility and area deprivation index (ADI), with the rationale that these measures serve as proxies for patient income, assets, and education level. These social risk factors (SRFs) have been associated with poorer health outcomes (such as higher EDAC), and developers described four potential pathways for this effect. Analyses showed that patients with either SRF (high ADI score or dual eligibility) were at increased risk of EDAC, even after adjusting for other risk factors in a multivariable model. However, the overall effect of these SRFs seemed to be minimal. First, the models calibrated well without adding the SRFs. Second, the estimated EDAC measure scores for hospitals with and without adjusting for either SRF were highly correlated. Finally, the differences in measure scores between the social risk factor unadjusted and adjusted measures were minimal. Given these findings and the complex pathways that could explain any relationship between social risk and days in acute care, developers chose not to incorporate SRFs into the measure.	--	N/A

[53] Torio, C.M., Moore, B.J. (2016). National Inpatient Hospital Costs: The Most Expensive Conditions by Payer, 2013. HCUP Statistical Brief # 204. Agency for Healthcare Research and Quality. Retrieved August 23, 2020.

MUC2023-117 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	--	Entity: the CBE consensus metric based on the reported results (MERIT) was 0.738, which indicates a lack of consensus. Specifically, the reasons that one TEP member voted moderately disagree. There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-117 Measure Reliability

The performance score is a ratio of observed to predicted days where predicted days are calculated with a risk-adjustment model.

The measure report indicates a correlation of 0.402 from a random split-half correlation approach to assessing reliability.

Interpretation:

A random split-half correlation of 0.402 was reported. Well over 50% of the entities are likely to have reliability below 0.6.

It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.

3.6 MUC2023-119 Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF)

Description: This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for heart failure (HF). The acute-care outcomes include 1) ED visits, 2) observation stays (OBSs), and 3) unplanned readmissions.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF) to the Hospital Readmissions Reduction Program (HRRP). This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for heart failure (HF). The acute care outcomes include 1) emergency department (ED) visits, 2) observation stays (OBSs), and 3) unplanned readmissions. ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. The original measure was originally published on the 2014 MUC list and was most recently endorsed by the consensus-based entity (CBE) in 2021. It has been reported in the Hospital Inpatient Reporting Program (HIQR) since 2017. The HF EDAC measure, which is now calculated as a ratio, is returning to the 2023 MUC list for inclusion into HRRP. Excess days in acute care settings can lead to both lower patient experience of care and poor health outcomes. Currently, there is a growing concern of undercounting excess days, which leads to underestimating its true burden to hospitals and patients. The burdens from these excess days are not adequately captured by the current HF readmission measure in HRRP. CMS seeks to replace the HRRP readmission HF measure with the EDAC HF measure, as this measure expands the definition of readmission by including ED visits, OBS stays and unplanned readmission, which gets us closer to truly reflecting the great efforts to meet patients' needs in the acute care settings.

Table 3.6.1. MUC2023-119 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-119	Description
Measure name	Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF)
MUC ID	MUC2023-119
Cascade priority	Seamless Care Coordination
Measure steward	Centers for Medicare & Medicaid Services
Measure Developer	Yale/CORE

CMS MERIT Submission Information MUC2023-119	Description
Program submitted to	Hospital Readmissions Reduction Program
Committee assigned to	Hospital Committee
Related measures in the program	CBE #0330: Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Heart Failure (HF) Hospitalization CBE #2881: Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI) CBE #2882: Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia
Is this a new measure in this year's MUC List?	No. Developer submitted response during PA development: "This measure has been modified from the IQR version and is being submitted as a new measure for HRRP."
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted during MUC year 2014 as MUC14 – X3722. The measure was submitted to HIQR 2014 and reviewed by the MAP Hospital Workgroup and the Coordinating Committee, leading to a recommendation of conditional support pending endorsement by a CBE.
Is the measure currently used in a CMS program	Measure currently used in a CMS program, but the measure is undergoing substantial change.
If previously used, please describe the history of the measure in CMS program	Hospital Inpatient Quality Reporting 2017-current
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE #2880
History of endorsement	Year of most recent CDP endorsement: 2021
Path to endorsement	Year of next anticipated CDP endorsement review: 2025
Measure Specification Details	
Measure Description	This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for heart failure (HF). The acute-care outcomes include 1) ED visits, 2) observation stays (OBSs), and 3) unplanned readmissions. Unplanned readmissions are defined using the planned readmission algorithm (PRA). ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. CMS annually reports the measure for patients who are 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or Veterans Health Administration (VA) facilities.
Data source	Administrative Data (non-claims); Claims Data

CMS MERIT Submission Information MUC2023-119	Description
Level of analysis	Facility
Numerator	The outcome of the measure is a count of the number of days the patient spends in acute care within 30 days of discharge from an eligible index HF hospitalization. We define days in acute care as days spent in an ED, admitted to an observation unit, or admitted as an unplanned readmission for any cause to a short-term acute care hospital, within 30 days from the date of discharge from the index HF hospitalization.
Denominator	To be included in the measure cohort patients must meet the following inclusion criteria: 1. Have a principal discharge diagnosis of HF; 2. Enrolled in Medicare FFS Part A and Part B for 12-months prior to the date of admission and Part A during the index admission. [For VA beneficiaries hospitalized in VA hospitals, there are no Medicare FFS enrollment requirements. For VA beneficiaries hospitalized in non-VA hospitals, they must be concurrently enrolled in Medicare FFS Part A at the time of the index admission, to be eligible for cohort inclusions, but the 12-month Part A and B enrollment prior to admission is not required.]; 3. Aged 65 or older; 4. Discharged alive from a non-federal short-term acute care hospital or VA hospital; and 5. Not transferred to another acute care facility.
Numerator exclusions	N/A
Denominator exclusions	The measure excludes index hospitalizations that meet any of the following exclusion criteria: 1. Without at least 30 days of post-discharge enrollment in Medicare FFS (in the case of patients who are not VA beneficiaries); 2. Discharged against medical advice; 3. HF admissions within 30 days of discharge from a prior HF index admission; 4. With a procedure code for LVAD implantation or heart transplantation either during the index admission or up the 12 months prior to the index admission; 5. With a principal diagnosis code of COVID-19 (ICD-10-CM code U07.1) or with a secondary diagnosis code of COVID-19 coded as POA on the index admission claim.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	CMS annually reports the measure for patients who are 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or are patients hospitalized in Veterans Health Administration (VA) facilities.

CMS MERIT Submission Information MUC2023-119	Description
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.6.2. MUC2023-119 Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF) Measure Evaluation

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest*)	Several strategies have been shown to reduce re-hospitalization. For example, better care coordination at discharge reduced the likelihood of a readmission: discharge summaries that were transmitted to any outpatient clinician were associated with lower odds of readmission, and discharge summaries that included elements related to transitions of care were also associated with lower odds of readmission.[54] In addition, a meta-analysis found that interventions such as patient education and patient education combined with other interventions were the most beneficial; interventions that included one or more interventions were 1.4 to	--	The study population is the same as the target quality program population.

[54] Salim Al-Damluji M, Dzara K, Hodshon B, Punnanithinont N, Krumholz HM, Chaudhry SI, Horwitz LI. (2015). Association of Discharge Summary Quality With Readmission Risk for Patients Hospitalized With Heart Failure Exacerbation. Circulation: Cardiovascular Quality and Outcomes, 8(1), 109-111. https://doi.org/10.1161/CIRCOUTCOMES.114.001476

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	6.8 times less likely to be readmitted.[55] A review article examining effective strategies to prevent hospitalization and rehospitalization found that comprehensive discharge support, including individualized instruction and early post-discharge follow-up (by phone, home visit, or in clinic) in the immediate post-discharge period reduced mortality and/or readmissions in clinical trials.[56] Studies have also reported reductions in emergency department (ED) visit rates for patients with other conditions after implementation of interventions that focused on the inpatient and outpatient settings.[57] Safely transitioning patients from hospital to home requires a complex series of tasks that would be cumbersome to capture individually as process measures: timely and effective communication between providers, prevention of and response to complications, patient education about post-discharge care and self-management, timely follow-up, and more. Suboptimal transitions contribute to a variety of adverse events post-discharge, including ED evaluation, need for observation, and readmission. Measures of unplanned readmission already exist, but there are no current consensus based-entity (CBE)-endorsed measures for ED and observation stay utilization for this condition. It is thus difficult for providers and consumers to gain a complete picture of post-discharge outcomes. Moreover, separately		

[55] Wan, T.T.H., Terry, A., Cobb, E., McKee, B., Tregerman, R., Barbaro, S.D.S. (2017). Strategies to Modify the Risk of Heart Failure Readmission: A Systematic Review and Meta-Analysis. Health Services Research and Managerial Epidemiology. 4, 1-16. https://doi.org/10.1177/2333392817701050
[56] Horwitz, L., & Krumholz, H. (2019). Systems-based Strategies to Reduce Hospitalizations in Patients With Heart Failure. Retrieved March 2019 from https://UpToDate.com
[57] Bondestam, E., Breikss, A., Hartford, M. (1995). Effects of Early Rehabilitation on Consumption of Medical Care During the First Year After Acute Myocardial Infarction in Patients > or = 65 Years of Age. American Journal of Cardiology, 75(12), 767-771. https://doi.org/10.1016/s0002-9149(99)80408-1

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	reporting each of these outcomes encourages "gaming," such as re-categorizing readmission stays as observation stays to avoid a readmission outcome. By capturing a range of acute-care events that are important to patients, we can produce a more complete picture of post-discharge outcomes that better informs consumers about care quality and incentivizes global improvement in transitional care.		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Days in acute care from any cause is an adverse event (MERIT) (CBE – a material outcome). Outcomes occurring within 30 days of discharge can be influenced by hospital care. The 30-day time frame is a clinically meaningful period for hospitals to collaborate with their communities to reduce days in acute care (MERIT). Multiple events are counted to capture the full patient experience in the post-discharge period (MERIT).	Entity: Stakeholders have not reviewed the version of the measure being submitted here for 2023 in which two changes have been made: the outcome has been modified from a difference to a ratio, and we have simplified the outcome weighting by assigning rounded times to outcome events (e.g., rounding an ED visit or an observation stay to one full day) (MERIT).	Most persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Medicare Part A Inpatient and Part B Outpatient Claims, Medicare Enrollment Database (EDB), Veterans Health Administration (VA) Data, The American Community Survey.	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Data submitted by the measure developer show variation in performance by hospital. The mean measure score is 1.015 with a standard deviation of 0.162. The minimum performance score is 0.592, the 10th percentile score is 0.828, the median performance score is 0.994, the 90th percentile score is 1.219, and the maximum performance score is 1.954.	--	Most of the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Prevalence of HF in the U.S. is estimated to be more than 6 million cases,[58,59] and is suspected to be the leading cause of death in people over age 65.[60] The lifetime risk of HF is estimated at 1 in 5 at 40 years of age, and the prevalence in the aging US population is expected to increase by 46% by 2030.[61] Total direct medical costs of HF were estimated at $30.7 billion in 2012 and are projected to increase by approximately 127% to $69.7 billion by 2030.[62,63] The current process-based performance measures cannot capture all the ways that care within the hospital might influence outcomes. As a result, many stakeholders, including patient organizations, are interested in outcome measures that allow patients and providers to assess relative outcome performance among hospitals.[64] Persons: (2/2 or 100%) agreed "information from the measure is important to know about AND can help improve care for patients in similar situations or with similar conditions" (MERIT).		

[58] Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., ... & Turner, M. B. (2015). Executive summary: heart disease and stroke statistics—2015 update. Circulation, 131(4), 434-441.
[59] Jackson, S.L., Tong, X., King, R.J., Loustalot, F., Hong, Y., Ritchey, M.D. (2018). National Burden of Heart Failure Events in the United States, 2006 to 2014. Circulation: Heart Failure, 11(12), e004873. https://doi.org/10.1161/CIRCHEARTFAILURE.117.004873
[60] Hines, A.L., Barrett, M.L., Jiang, H.J., Steiner, C.A. (2014). Conditions With the Largest Number of Adult Hospital Readmissions by Payer. Agency for Healthcare Research and Quality. Retrieved April 1, 2016, from https://www.hcup-Us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.jsp
[61] Heidenreich, P.A., Albert, N.M., Allen, L.A., Bluemke, D.A, Butler, J., Fonarow, G.C., Ikonomidis, J.S., Khavjou, O., Konstam, M.A., Maddox, T.M, Nichol, G., Pham, M., Pina, I.L. Trogdon, J.G. (2013). Forecasting the Impact of Heart Failure in the United States: A Policy Statement From the American Heart Association. Circulation: Heart Failure, 6(3), 606–619. https://doi.org/10.1161/HHF.0b013e318291329a
[62] Jackson, S.L., Tong, X., King, R.J., Loustalot, F., Hong, Y., Ritchey, M.D. (2018). National Burden of Heart Failure Events in the United States, 2006 to 2014. Circulation: Heart Failure, 11(12), e004873. https://doi.org/10.1161/CIRCHEARTFAILURE.117.004873
[63] Heidenreich, P.A., Albert, N.M., Allen, L.A., Bluemke, D.A, Butler, J., Fonarow, G.C., Ikonomidis, J.S., Khavjou, O., Konstam, M.A., Maddox, T.M, Nichol, G., Pham, M., Pina, I.L. Trogdon, J.G. (2013). Forecasting the Impact of Heart Failure in the United States: A Policy Statement From the American Heart Association. Circulation: Heart Failure, 6(3), 606–619. https://doi.org/10.1161/HHF.0b013e318291329a
[64] Bratzler, D.W., Nsa W., Houck, P.M. (2007). Performance Measures for Pneumonia: Are They Valuable, and Are Process Measures Adequate. Current Opinion in Infectious Diseases, 20(2), 182-189. https://doi.org/10.1097/QCO.0b013e3280495468

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Reliability was assessed using the split sample approach on a set of 3,713 hospitals. The measure developer provided three citations (previously cited in table) for the appropriateness of this approach and reported they interpret the reliability of this measure as adequate in the context of split-sample reliability for a clinical risk-adjusted outcome measure.	The measure report indicates a correlation of 0.527 from a random split-half correlation approach to assessing reliability. Over 50% of the entities are likely to have reliability below 0.6. It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: To demonstrate empiric validity of the updated HF EDAC measure (ratio of predicted days and expected days) using the new count approach for observation stays and ED visits, we assessed the measure's correlation with the existing currently implemented HF EDAC measure (difference of predicted days and expected days). The two measures were calculated on the same set of 3,593 hospitals with at least 25 admissions from July 1, 2019 – June 30, 2022. The correlation between the two measures was 0.98 ($p<0.001$), which is positive and significant. This is in the hypothesized direction as both measures assess the quality of care for HF. Systematic review: The results indicate that an intervention involving any human factor principles may nearly double an individual's probability of not being readmitted. Participants in interventions that incorporated single or combined principles were 1.4 to 6.8 times less likely to be readmitted.[65]	No explicit articulation of the way an entity may improve performance on the measure focus. Empirical Validity: the correlation study between the two specified versions of the measure does not address the association between the entity and the measure focus without the presumption that the current CBE-endorsed version is valid (CBE).	There is an association between the entity and the measure focus *within* the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[65] Wan, T.T.H., Terry, A., Cobb, E., McKee, B., Tregerman, R., Barbaro, S.D.S. (2017). Strategies to Modify the Risk of Heart Failure Readmission: A Systematic Review and Meta-Analysis. Health Services Research and Managerial Epidemiology. 4, 1-16.

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Several randomized trials reported reducing 30-day readmission rates by 20-40%.[66,67,68,69]		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	In updated testing, developers reported on testing risk adjustment for dual eligibility and area deprivation index (ADI), with the rationale that these measures serve as proxies for patient income, assets, and education level. These social risk factors (SRFs) have been associated with poorer health outcomes (such as higher EDAC), and developers described four potential pathways for this effect. Analyses showed that patients with either SRF (high ADI score or dual eligibility) were at increased risk of EDAC, even after adjusting for other risk factors in a multivariable model. However, the overall effect of these SRFs seemed to be minimal. First, the models calibrated well without adding the SRFs. Second, the estimated EDAC measure scores for hospitals with and without adjusting for either SRF were highly correlated. Finally, the differences in measure scores between the social-risk-factor unadjusted and adjusted measures were minimal. Given these findings and the complex pathways that could explain any relationship between social risk and days in acute care, developers chose not to incorporate SRFs into the measure.	--	N/A

[66] Jack, B.W., Chetty, V.K., Anthony, D., Greenwald, J.L., Sanchez, G.M., Johnson, A.E., Forsythe, S.R., O'Donnel, J.K., Paasche-Orlow, M.K., Manasseh, C., Martin, S., Culpepper, L. (2009). A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A Randomized Trial. Annals of Internal Medicine, 150(3), 178-87. https://doi.org/10.7326/0003-4819-150-3-200902030-00007
[67] Coleman, E.A., Smith, J.D., Frank, J.C., Min, S.J., Parry, C., Kramer, A.M. (2004). Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention. Journal of the American Geriatrics Society, 52(11), 1817-25. https://doi.org/10.1111/j.1532-5415.2004.52504.x
[68] Courtney, M., Edwards, H., Chang, A., Parker, A., Finlayson, K., Hamilton, K. (2009). Fewer Emergency Readmissions and Better Quality of Life for Older Adults at Risk of Hospital Readmission: A Randomized Controlled Trial to Determine the Effectiveness of a 24-week Exercise and Telephone Follow-up Program. Journal of the American Geriatrics Society, 57(3), 395-402. https://doi.org/10.1111/j.1532-5415.2009.02138.x
[69] Garasen, H., Windspoll, R., Johnsen, R. (2007). Intermediate Care at a Community Hospital as an Alternative to Prolonged General Hospital Care For Elderly Patients: A Randomised Controlled Trial. BioMed Central Public Health, 7, 68. https://doi.org/10.1186/1471-2458-7-68

MUC2023-119 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*		Entity: the CBE consensus metric based on the reported results (MERIT) was 0.738, which indicates a lack of consensus. There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-119 Measure Reliability

The performance score is a ratio of observed to predicted days where predicted days is calculated with a risk-adjustment model.

The measure report indicates a correlation of 0.527 from a random split-half correlation approach to assessing reliability.

Interpretation:

A random split-half correlation of 0.527 was reported. Over 50% of the entities are likely to have reliability below 0.6.

It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.

3.7 MUC2023-120 Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN)

Description: This measure estimates days spent in acute care (i.e., time spent in ED, unplanned readmission and observation stays) within 30 days of discharge from an inpatient hospitalization for pneumonia.

Measure Type: Outcome

Level of Analysis: Facility/Hospital/Agency

Data Source(s): Claims Data

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN) to the Hospital Readmissions Reduction Program (HRRP). This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for pneumonia (PN). The acute care outcomes include 1) emergency department (ED) visits, 2) observation stays (OBSs), and 3) unplanned readmissions. ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. The original measure was originally published on the 2014 MUC list and was most recently endorsed by the consensus-based entity (CBE) in 2021. It has been reported in the Hospital Inpatient Reporting Program (HIQR) since 2018. The EDAC measure, which is now calculated as a ratio, is returning to the 2023 MUC list for HRRP. Excess days in acute care settings can lead to both lower patient experience of care and poor health outcomes. Currently, there is a growing concern of undercounting excess days, which leads to underestimating its true burden to hospitals and patients. The burdens from these excess days are not adequately captured by the current PN readmission measure in HRRP. CMS seeks to replace the HRRP readmission PN measure with the EDAC PN measure, as this measure expands the definition of readmission by including ED visits, OBS stays, and unplanned readmission, which gets us closer to truly reflecting the great efforts to meet patients' needs in the acute care settings.

Table 3.7.1. MUC2023-120 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-120	Description
Measure name	Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN)
MUC ID	MUC2023-120
Cascade priority	Seamless Care Coordination
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Yale/CORE
Program submitted to	Hospital Readmissions Reduction Program

CMS MERIT Submission Information MUC2023-120	Description
Committee assigned to	Hospital Committee
Related measures in the program	CBE #0506: Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Pneumonia Hospitalization CBE #2880: Excess Days in Acute Care (EDAC) after Hospitalization for Heart Failure (HF) CBE #2881: Excess Days in Acute Care (EDAC) after Hospitalization for AMI
Is this a new measure in this year's MUC List?	No. Developer submitted response during PA development: "This measure has been modified from the IQR version and is being submitted as a new measure for HRRP."
If not a new measure, then describe the history of this measure in prior MUC list inclusion	Measure currently used in a CMS program, but the measure is undergoing substantial change.
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	Hospital Inpatient Quality Reporting (HIQR); 2018-Current
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE 2882
History of endorsement	Initial endorsement 12/9/2016. Last endorsement 11/30/2021
Path to endorsement	Year of next anticipated CDP endorsement review: 2025
Measure Specification Details	
Measure Description	This measure estimates days spent in acute care within 30 days post discharge from an inpatient hospitalization for pneumonia (PN). The acute care outcomes include 1) ED visits, 2) observation stays (OBSs), and 3) unplanned readmissions. Unplanned readmissions are defined using the planned readmission algorithm (PRA). ED visit counted as 1 day and OBSs are counted by hours and rounded up to 1 day. CMS annually reports the measure for patients who are 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or Veterans Health Administration (VA) facilities.
Data source	Claims Data
Level of analysis	Facility/Hospital/Agency

CMS MERIT Submission Information MUC2023-120	Description
Numerator	The outcome of this measure is a count of the number of days the patient spends in acute care within 30 days of discharge from an eligible index pneumonia hospitalization. We define days in acute care as days spent in an ED, admitted to an observation unit, or admitted as an unplanned readmission for any cause to a short-term acute care hospital, within 30 days from the date of discharge from the index pneumonia hospitalization.
Denominator	The cohort includes admissions for patients that meet all of the following inclusion criteria: 1. Discharged from the hospital with diagnosis coding that meets one of the two following requirements: a. Principal discharge diagnosis of pneumonia; or b. (i). Principal discharge diagnosis of sepsis (that is not severe); and (ii). A secondary diagnosis of pneumonia coded as present on admission (POA); and (iii). No secondary diagnosis of sepsis that is both severe and coded as POA; 2. Enrolled in Medicare FFS Part A and Part B for the 12 months prior to the date of admission and Part A during the index admission [For VA beneficiaries hospitalized in VA hospitals, there are no Medicare FFS enrollment requirements. For VA beneficiaries hospitalized in non-VA hospitals, they must be concurrently enrolled in Medicare FFS Part A at the time of the index admission, to be eligible for cohort inclusion, but the 12-month Part A and B enrollment prior to admission is not required.]; 3. Aged 65 or over; 4. Discharged alive from a non-federal short-term acute care hospital (or VA hospital); 5. Not transferred to another acute care facility.
Numerator exclusions	N/A
Denominator exclusions	This measure excludes index admissions for patients that meet any of the following exclusion criteria: 1. Without at least 30 days of post-discharge enrollment in Medicare FFS (in the case of patients who are not VA beneficiaries); 2. Pneumonia admissions within 30 days of discharge from a prior pneumonia index admission; or 3. Discharged against medical advice. 4. With a principal diagnosis code of COVID-19 (ICD-10-CM code U07.1) or with a secondary diagnosis code of COVID-19 coded as POA on the index admission claim.
Denominator exceptions	N/A
Risk adjustment	N/A
Development Status	Fully Developed
If not fully developed, development stage	N/A

CMS MERIT Submission Information MUC2023-120	Description
Target population	Patients who are age 65 years or older and enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or are patients hospitalized in Veterans Health Administration (VA) facilities.
Measure type	Outcome
Is the measure composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.7.2. MUC2023-120 Excess Days in Acute Care (EDAC) after Hospitalization for Pneumonia (PN) Measure Evaluation

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest*)	In the case of pneumonia, specifically, studies have also reported reductions in emergency department (ED) visit rates for patients with other conditions after implementation of interventions that focused on the inpatient and outpatient settings.[70] Although many current hospital interventions are known to decrease the risk of readmission within 30 days of hospital discharge,[71,72] current process-based performance	--	The study population is the same as the target quality program population.

[70] Bondestam, E., Breikss, A., Hartford, M. (1995). Effects of Early Rehabilitation on Consumption of Medical Care During the First Year After Acute Myocardial Infarction in Patients > or = 65 Years of Age. American Journal of Cardiology, 75(12), 767-771. https://doi.org/10.1016/s0002-9149(99)80408-1
[71] Leppin, A. L., Gionfriddo, M. R., Kessler, M., Brito, J. P., Mair, F. S., Gallacher, K., ... & Montori, V. M. (2014). Preventing 30-day hospital readmissions: a systematic review and meta-analysis of randomized trials. JAMA internal medicine, 174(7), 1095-1107.
[72] Radhakrishnan, K., Jones, T.L., Weems, D., Knight, T.W., Rice, W.H. (2018). Seamless Transitions: Achieving Patient Safety Through Communication and Collaboration. Journal of Patient Safety, 14(1), e3-e5. https://doi.org/10.1097/PTS.0000000000000168

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
	measures cannot capture all the ways that care within the hospital might influence outcomes. Safely transitioning patients from hospital to home requires a complex series of tasks that would be cumbersome to capture individually as process measures: timely and effective communication between providers, prevention of and response to complications, patient education about post-discharge care and self-management, timely follow-up, and more. Suboptimal transitions contribute to a variety of adverse events post-discharge, including ED evaluation, need for observation, and readmission. Measures of unplanned readmission already exist, but there are no current consensus based-entity (CBE)-endorsed measures for ED and observation stay utilization for this condition. It is thus difficult for providers and consumers to gain a complete picture of post-discharge outcomes. Moreover, separately reporting each of these outcomes encourages "gaming," such as re-categorizing readmission stays as observation stays to avoid a readmission outcome. By capturing a range of acute-care events that are important to patients, we can produce a more complete picture of post-discharge outcomes that better informs consumers about care quality and incentivizes global improvement in transitional care.		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Days in acute care from any cause is an adverse event. Outcomes occurring within 30 days of discharge can be influenced by hospital care. The 30-day time frame is a clinically meaningful period for hospitals to	Entity: Stakeholders have not reviewed the version of the measure being submitted here for 2023 in which two changes have been made: The outcome has been modified from a difference to a ratio and we have simplified the outcome weighting by assigning rounded times to outcome events (e.g., rounding an	Most persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	collaborate with their communities to reduce days in acute care (MERIT). Multiple events are counted to capture the full patient experience in the post-discharge period (MERIT).	ED visit or an observation stay to one full day) (MERIT).	
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Medicare Part A Inpatient and Part B Outpatient Claims, Medicare Enrollment Database (EDB), Veterans Health Administration (VA) Data, The American Community Survey.	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Data submitted by the measure developer show variation in performance by hospital. The mean measure score is 1.056 with a standard deviation of 0.205. The minimum performance score is 0.556, the 10th percentile score is 0.785, the median performance score is 1.001, the 90th percentile score is 1.284, and the maximum performance score is 2.512. In 2007, the Medicare Payment Advisory Commission (MedPAC) called for hospital-specific public reporting of readmission rates and identified pneumonia as a priority condition. Since then, pneumonia continues to be the most common infectious cause of hospitalization in the US, leading to more than 1 million hospitalizations per year and	--	Most of the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	incurring billions of dollars in healthcare costs.[73,74] Approximately 20% of pneumonia patients are re-hospitalized within 30 days, representing the second-highest proportion of all rehospitalizations at 6.3%.[75,76] Among patients 65 years [of age] or older in the United States, pneumonia is the third leading cause of rehospitalization, accounting for more than 88,800 readmissions at a total cost of $1.1 billion.[77] Persons: (2/2 or 100%) agreed "information from the measure is important to know about AND can help improve care for patients in similar situations or with similar conditions" (MERIT).		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Reliability was assessed using the split sample approach on a set of 4,210 hospitals. The measure developer provided three citations[78,79,80] for the appropriateness of this approach and reported they interpret the reliability of this measure as adequate in the context of split-sample reliability for a clinical risk-adjusted outcome measure.	The measure report indicates a correlation of 0.576 from a random split-half correlation approach to assessing reliability. Over 50% of the entities are likely to have reliability below 0.6. It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.

[73] Lindenauer, P.K., Strait, K.M., Grady, J.N., Ngo, C.K., Parisi, M.L., Metersky, M., Ross, J.S., Bernheim, S.M., Dorsey, K. (2018). Variation in the Diagnosis of Aspiration Pneumonia and Association with Hospital Pneumonia Outcomes. Annals of the American Thoracic Society, 15(5), 562-569. https://doi.org/10.1513/annalsats.201709-728oc
[74] Jain, S., Khera, R., Mortensen, E.M., Weissler, J.C. (2018). Readmissions of Adults Within Three Age Groups Following Hospitalization for Pneumonia: Analysis From the Nationwide Readmissions Database. Public Library of Science One, 13(9), e0203375. https://doi.org/10.1371/journal.pone.0203375
[75] Jencks, S. F., Williams, M. V., & Coleman, E. A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. New England Journal of Medicine, 360(14), 1418-1428.
[76] Mehta, A. B., Cooke, C. R., Douglas, I. S., Lindenauer, P. K., Wiener, R. S., & Walkey, A. J. (2017). Association of early do-not-resuscitate orders with unplanned readmissions among patients hospitalized for pneumonia. Annals of the American Thoracic Society, 14(1), 103-109.
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[78] Cruz CO, Meshberg EB, Shofer FS, McCusker CM, Chang AM, Hollander JE. Interrater reliability and accuracy of clinicians and trained research assistants performing prospective data collection in emergency department patients with potential acute coronary syndrome. Ann Emerg Med. 2009 Jul;54(1):1-7.
[79] Hall SF, Groome PA, Streiner DL, Rochon PA. Interrater reliability of measurements of comorbid illness should be reported. J Clin Epidemiol. 2006 Sep;59(9):926-33.
[80] Hand PJ, Haisma JA, Kwan J, Lindley RI, Lamont B, Dennis MS, Wardlaw JM. Interobserver agreement for the bedside clinical assessment of suspected stroke. Stroke. 2006 Mar;37(3):776-80.

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: To demonstrate empiric validity of the updated PN EDAC measure (ratio of predicted days and expected days) using the new count approach for observation stays and ED visits, we assessed the measure's correlation with the existing currently implemented PN EDAC measure (difference of predicted days and expected days). The two measures were calculated on the same set of 3,593 hospitals with at least 25 admissions from July 1, 2019 – June 30, 2022. The correlation between the two measures was 0.98 ($p<0.001$), which is positive and significant. This is in the hypothesized direction, as both measures assess the quality of care for PN. Several randomized trials reported reducing 30-day readmission rates by 20-40%.[81,82,83,84] Outside the randomized controlled trial setting, there is also increasing evidence that hospitals and health plans have been able to reduce readmission rates through more generalizable quality improvement initiatives.[85,86,87] In the case of pneumonia,	No explicit articulation of the way an entity may improve performance on the measure focus. Empirical Validity: the correlation study between the two specified versions of the measure does not address the association between the entity and the measure focus without the presumption that the current CBE endorsed version is valid (CBE).	There is an association between the entity and the measure focus *within* the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[81] Jack, B.W., Chetty, V.K., Anthony, D., Greenwald, J.L., Sanchez, G.M., Johnson, A.E., Forsythe, S.R., O'Donnel, J.K., Paasche-Orlow, M.K., Manasseh, C., Martin, S., Culpepper, L. (2009). A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A Randomized Trial. Annals of Internal Medicine, 150(3), 178-87. https://doi.org/10.7326/0003-4819-150-3-200902030-00007
[82] Coleman, E.A., Smith, J.D., Frank, J.C., Min, S.J., Parry, C., Kramer, A.M. (2004). Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention. Journal of the American Geriatrics Society, 52(11), 1817-25. https://doi.org/10.1111/j.1532-5415.2004.52504.x
[83]Courtney, M., Edwards, H., Chang, A., Parker, A., Finlayson, K., Hamilton, K. (2009). Fewer Emergency Readmissions and Better Quality of Life for Older Adults at Risk of Hospital Readmission: A Randomized Controlled Trial to Determine the Effectiveness of a 24-week Exercise and Telephone Follow-up Program. Journal of the American Geriatrics Society, 57(3), 395-402. https://doi.org/10.1111/j.1532-5415.2009.02138.x
[84] Garasen, H., Windspoll, R., Johnsen, R. (2007). Intermediate Care at a Community Hospital as an Alternative to Prolonged General Hospital Care For Elderly Patients: A Randomised Controlled Trial. BioMed Central Public Health, 7, 68. https://doi.org/10.1186/1471-2458-7-68
[85] Gerhardt, G., Yemane, A., Hickman, P., Oelschlaeger, A., Rollins, E., Brennan, N. (2013). Medicare Readmission Rates Showed Meaningful Decline in 2012. Medicare & Medicaid Research Review, 3(2), E1-E12. https://doi.org/10.5600/mmrr.003.02.b01
[86] Stauffer, B.D., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Stafford, P.M., Ballard, D.J. (2011). Effectiveness and Cost of a Transitional Care Program for Heart Failure: A Prospective Study With Concurrent Controls. Archives of Internal Medicine, 171(14), 1238-1243. https://doi.org/10.1001/archinternmed.2011.274
[87] Graham, J., Tomcavage, J., Salek, D., Sciandra, J., Davis, D.E., Stewart, W.F. (2012). Postdischarge Monitoring Using Interactive Voice Response System Reduces 30-day Readmission Rates in a Case-managed Medicare Population. Medical Care, 50(1), 50-57. https://doi.org/10.1097/MLR.0b013e318229433e

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	specifically, studies have also reported reductions in emergency department (ED) visit rates for patients with other conditions after implementation of interventions that focused on the inpatient and outpatient settings.[88]		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	In updated testing, developers reported on testing risk adjustment for dual eligibility and area deprivation index (ADI), with the rationale that these measures serve as proxies for patient income, assets, and education level. These social risk factors (SRFs) have been associated with poorer health outcomes (such as higher EDAC), and developers described four potential pathways for this effect. Analyses showed that patients with either SRF (high ADI score or dual eligibility) were at increased risk of EDAC, even after adjusting for other risk factors in a multivariable model. However, the overall effect of these SRFs seemed to be minimal. First, the models calibrated well without adding the SRFs. Second, the estimated EDAC measure scores for hospitals with and without adjusting for either SRF were highly correlated. Finally, the differences in measure scores between the social-risk-factor unadjusted and adjusted measures were minimal. Given these findings and the complex pathways that could explain any relationship between social risk and days in acute care, developers chose not to incorporate SRFs into the measure.	--	N/A

[88] Bondestam, E., Breikss, A., Hartford, M. (1995). Effects of Early Rehabilitation on Consumption of Medical Care During the First Year After Acute Myocardial Infarction in Patients > or = 65 Years of Age. American Journal of Cardiology, 75(12), 767-771. https://doi.org/10.1016/s0002-9149(99)80408-1

MUC2023-120 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	--	Entity: the CBE consensus metric based on the reported results (MERIT) was 0.738, which indicates a lack of consensus. There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-120 Measure Reliability

The performance score is a ratio of observed to predicted days where predicted days is calculated with a risk-adjustment model. The measure report indicates a correlation of 0.576 from a random split-half correlation approach to assessing reliability.

Interpretation:

A random split-half correlation of 0.576 was reported. Over 50% of the entities are likely to have reliability below 0.6.

It may be possible to calculate a signal-to-noise reliability if observed and predicted days were available at the patient level. There was not enough information to simulate any tables to further assess reliability.

3.8 MUC2023-138 ESRD Dialysis Patient Life Goals Survey (PaLS)

Description: The PaLS is a patient self-report survey that includes eight items related to dialysis facility care team discussions about patient life goals.

Measure Type: Process

Level of Analysis: Population: Community, County or City

Data Source(s): Administrative Data (non-claims); Claims Data; Patient Reported Data and Surveys: Instrument-Based Data; Registries

Development Status: Fully Developed

Endorsement Status: Submitted for Endorsement

CMS-Provided Rationale for Measure Consideration:

The ESRD Patient Life Goals Survey (PaLS) is a patient self-report survey that includes eight items related to dialysis facility care team discussions about patient life goals. The purpose of the measure is to ensure that discussions around patient life goals are happening, not in any way to apply a score to the life goals identified by a patient or measure if the patient is meeting their life goals. CMS is considering adding the PaLS measure to the ESRD QIP measure set where it would fill a gap in the Patient and Family Engagement Domain. Patient-centered care is crucial for patients requiring chronic dialysis given how this treatment can upend patients' lives. Discussions that identify patient life goals can align patients and their care team around synergistic goals and can help facilitate shared decision-making about many aspects of care including dialysis prescription, dialysis modality, vascular access, and transplant. This measure also aligns with the National Quality Strategy goal to Engage Individuals and Communities to Become Partners in their Care using person-reported quality metrics.

Table 3.8.1. MUC2023-138 Measure Information

CMS MERIT Submission Information MUC2023-138	Description
Measure name	ESRD Dialysis Patient Life Goals Survey (PaLS)
MUC ID	MUC2023-138
Cascade priority	Person-Centered Care
Measure steward	Centers for Medicare & Medicaid Services
Measure Developer	University of Michigan
Program submitted to	End-Stage Renal Disease (ESRD) Quality Incentive Program

CMS MERIT Submission Information MUC2023-138	Description
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	No
If previously used, please describe the history of the measure in CMS program	New measure. Never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program.
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Submitted for Fall 2023 cycle
CBE endorsement number if applicable	CBE 3742
Path to endorsement	Planned resubmission in Fall 2024 with updated importance and validity information
Measure Specification Details	
Measure Description	The PaLS is a patient self-report survey that includes eight items related to dialysis facility care team discussions about patient life goals. Six of the items are Likert-type items that are used to generate a "quality of facility care team discussion" score. The remaining two items on the PaLS are checklist items: (1) a list of patient-reported life goals; and (2) a patient-reported list of dialysis care team members that the patient reports have talked with them about their life goals. These items are not scored. Instead, these items serve to provide contextual information for both the patient and the facility to guide care team discussions.
Data source	Administrative Data (non-claims); Claims Data; Patient Reported Data and Surveys: Instrument-Based Data; Registries
Level of analysis	Population: Community, County or City
Numerator	The numerator is the number of eligible patients from the denominator that completed at least one scorable item of the PaLS (i.e., at least one of the six Likert-type items). We begin with the number of patients that took the PaLS survey and completed at least one of the six Likert-type scorable PaLS items that comprise the "quality of facility care team discussions" score. The response options for these six items are scored from 1 to 5. Higher scores indicate greater overall patient reported agreement that the care team is asking about and discussing life goals with the patient. IRT scores are initially estimated on the theta metric (M=0; SD=1). In order to enhance the clinical utility of our PaLS measure, we converted theta scores to standardized scores on the t-score metric (M=50; SD=10). The conversion from a theta score to a t-score can be made using the following linear transformation: t-score=(theta x 10)+50. This patient-level t-score

CMS MERIT Submission Information MUC2023-138	Description
	represents a patient's perceptions about how well the facility is doing in discussing life goals as part of the treatment planning process. Although missing PaLS responses are allowed, patients must answer at least one of the six Likert-type scorable PaLS items to receive a t-score. The t-score is based on the data collected for the instrument testing, as described in the scientific acceptability, but is currently not part of the process measure calculation. The numerator is comprised of the number of eligible patients from the denominator who completed at least one Likert-type scorable item of the PaLS.
Denominator	All prevalent adult chronic dialysis patients (=18 y/o) treated by the facility (both In-Center and Home Dialysis) for greater than 90 days during the reporting period, who read and understand English*. *At present, this instrument is available to patients who read and understand English. Generalizing the survey to other languages will require additional development work. To be in the denominator, chronic dialysis patients at the facility must be eligible to complete the PaLS; that is, they must be (a) at least 18 years of age; (b) receiving long-term dialysis in the United States or any U.S. Territory for greater than 90 days during the reporting period; and (c) able to read and understand English (self-assessed and reported). Receiving long-term dialysis in the 90-day period was selected to allow time for the patient to stabilize after beginning chronic dialysis, and for the dialysis care team to initiate discussions about patient life goals as part of the treatment planning process. This 90-day period also reduces facility-related burden. At present, this instrument is available to patients who read and understand English. Generalizing the survey to other languages will require additional development work. To construct our denominator for testing, we used the following self-report data from survey participants: first name, last name, sex, birthdate, last four digits of their social security number (SSN), race, ethnicity, and level of education completed. The first four of these data elements were required; the last four elements' participants could elect to not report. Using self-reported first name, last name, last four digits of SSN (if provided), and birthdate, participants were then matched to our ESRD database, which contains treatment history data on all U.S. ESRD patients. We used CMS administrative data to confirm dialysis modality for participants linked to the UM-KECC ESRD database (in-center hemodialysis, home hemodialysis, peritoneal dialysis, or kidney transplant). In some cases, we could not match participants to their data in the UM-KECC ESRD database (i.e., if self-reported first or last name, birthdate, sex, or last four SSN digits were either missing, illegible or incomplete). In these cases, participants were not included in the analysis using dialysis modality. We implemented two different field-testing data collection efforts as part of our measurement development process, which we refer to hereafter as: 1) the calibration sample; and 2) the validation testing sample. For the calibration sample, 10.4% of participants were not able to be matched to the ESRD database. For the validation testing sample, 20.2% of participants were not able to be matched to the ESRD database.
Numerator exclusions	N/A

CMS MERIT Submission Information MUC2023-138	Description
Denominator exclusions	Exclusions are implicit based on eligibility criteria to complete the survey. These include: • Persons under age 18 • Persons who are kidney transplant recipients with a functioning allograft • Persons who had previously been on chronic dialysis but have recovered renal function, or are lost to follow up during the reporting period • Persons with duplicate surveys – we used either the first or the more complete survey • Persons that are unable to read and/or understand English (self-assessed and self-reported)* *At present, this instrument is available to patients who read and understand English. Generalizing the survey to other languages will require additional development work. To be in the denominator, chronic dialysis patients at the facility must be eligible to complete the PaLS; that is, they must be (a) at least 18 years of age; (b) receiving long-term dialysis in the United States or any U.S. Territory for greater than 90 days during the reporting period; (c) able to read and understand English (self-assessed and reported). Receiving long-term dialysis in the 90 day period was selected in order to allow time for the patient to stabilize after beginning chronic dialysis, and for the dialysis care team to initiate discussions about patient life goals as part of the treatment planning process. This 90 day period also reduces facility-related burden. Again, at present, this instrument is available to patients who read and understand English. Generalizing the survey to other languages will require additional development work. For our testing we used CMS administrative data to confirm patients were ESRD and on a chronic dialysis modality. Exclusions are implicit based on eligibility criteria to complete the survey. These include age less than 18; patient has a kidney transplant; patient with recovered renal function or lost to follow up; and unable to read and/or understand English (whether self-assessed or self-reported). In our testing we also excluded duplicate patient surveys.
Denominator exceptions	None
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All prevalent adult chronic dialysis patients (>=18 y/o) treated by the facility (both In-Center and Home Dialysis) for greater than 90 days during the reporting period, who read and understand English. At present, this instrument is available to patients who read and understand English. Generalizing the survey to other languages will require additional development work.
Measure type	Process

CMS MERIT Submission Information MUC2023-138	Description
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.8.2. MUC2023-138 ESRD Dialysis Patient Life Goals Survey (PaLS) Measure Evaluation

MUC2023-138 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	In a peritoneal dialysis care setting, discussing personal life goals that are important to the patient results in patient-centered care.[89] Poor decision-making experiences were associated with low treatment satisfaction for dialysis patients (Ladin et al. 2016; qualitative, n=31).[90]	Evidence, including from reviews, is limited to small sample, observational and/or qualitative studies and perspective papers, or reference to other diseases and treatments.	The study population is the same as the target quality program population.
Conformance: Does the measure as specified align with the conceptual intent?	Validity testing of the Patient Life Goals Survey (PaLS) instrument used: (1) known-groups validation (poor HRQOL was correlated with low satisfaction with life goals discussion); (2) floor and ceiling	Non-English speakers are excluded. PaLS validity has not been established in non-English speakers.	Most persons and entities in the quality program population are included in the specification.

[89] Blake PG, Brown EA. Person-centered peritoneal dialysis prescription and the role of shared decision-making. Perit Dial Int. 2020 May;40(3):302-309. doi: 10.1177/0896860819893803. Epub 2020 Jan 21. PMID: 32063218.

[90] Ladin, K, N Lin, E Hahn, G Zhang, S Koch-Weser and DE Weiner. Engagement in decision-making and patient satisfaction: A qualitative study of older patients' perceptions of dialysis initiation and modality decisions. Nephrology Dialysis Transplantation. 2016, Epub date: 2016/09/01, doi: 10.1093/ndt/gfw307.

MUC2023-138 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(Concept of Interest)	effects (no evidence of these effects was found); (3) convergent and discriminant validity (convergent with PROMIS meaning and purpose score, discriminant with other PROMIS factors); and (4) responsiveness (PaLS is able to distinguish change in goals over time). The Life Events survey instrument (used for responsiveness testing) was modified to tailor it to experiences of persons receiving dialysis.[91] Reliability testing of the instrument used: (1) exploratory and confirmatory factor analysis (PaLS was found to be unidimensional); (2) random split-half correlation at the population level (ICC=0.80). Missing data in sample was negligible. Item testing utilized patients in the ESRD program.		Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	PaLS is collected from patients in electronic and paper modes. No fees, licensing, or other requirements are associated with PaLS use.	PaLS is not currently incorporated into clinical data streams (it is a new survey); paper-based responses would require data entry.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes?	Evidence of possible performance gap from literature: (1) almost half of hemodialysis patients reported the decision of modality had not been their choice; (2) Many older patients were unaware that	Studies of gap cited are small sample and qualitative.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

[91] Holmes, T.H., & Rahe, R.H. (1967). The Social Readjustment Rating Scale. Journal of Psychosomatic Research, 11(2), 213–218. https://doi.org/10.1016/0022-3999(67)90010-4

MUC2023-138 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(*Context of Use*)	dialysis initiation was voluntary, held mistaken beliefs about their prognosis and were not engaged in decision-making.[92, 93] Patient-level testing data shows consistent variance in t-scores overall and by t-score decile. 22 of 22 patients who responded to the question agreed the measure is important to know about AND can help improve care for similar patients.	Burden/benefit trade-off not addressed in submission. Performance scores for entities not provided (patient-level mean score only).	
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Reported test-retest reliability of 0.80 suggests that well over 50% of the entities are likely to have reliability above 0.6. There is not enough detail for a more accurate estimate of the proportion of entities with reliability above 0.6.	Entity-level reliability testing is not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	KDOQI recommends developing an ESKD life plan and reviewing it annually.[94]	KDOQI recommendations are graded as *expert opinion.* Empirical validity testing was not performed at the measured entity level.	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control?	Measure is not risk-adjusted.	--	N/A

[92] Dahlerus C, Quinn M, Messersmith E, Lachance L, Subramanian L, Perry E, Cole J, Zhao J, Lee C, McCall M, Paulson L, Tentori F. Patient Perspectives on the Choice of Dialysis Modality: Results From the Empowering Patients on Choices for Renal Replacement Therapy (EPOCH-RRT) Study Am J Kidney Dis. 2016 Dec;68(6):901-910. doi: 10.1053/j.ajkd.2016.05.010. Epub 2016 Jun 21.
[93] Ladin, K, N Lin, E Hahn, G Zhang, S Koch-Weser and DE Weiner. Engagement in decision-making and patient satisfaction: A qualitative study of older patients' perceptions of dialysis initiation and modality decisions. Nephrology Dialysis Transplantation. 2016, Epub date: 2016/09/01, doi: 10.1093/ndt/gfw307.
[94] Lok CE, Huber TS, Lee T, et al; KDOQI Vascular Access Guideline Work Group. KDOQI clinical practice guideline for vascular access: 2019 update. Am J Kidney Dis. 2020;75(4)(suppl 2):S1-S16

MUC2023-138 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(Context of Use)			
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Not currently in use in any CMS program.	Measured entities did not provide feedback on the measure.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-138 Measure Reliability

The performance score is a percentage of patients completing at least one scorable item of the survey within an entity.

The measure report indicates a test-retest reliability of 0.80 across 420 entities.

Interpretation:

Reported test-retest reliability of 0.80 suggests that well under 50% of the entities are likely to have reliability below 0.6. However further analysis to estimate the effect of population size on reliability should be performed.

3.9 MUC2023-139 Hospital Equity Index (HEI)

Description: The HEI is a prototype method for a single score that summarizes several measurements of disparity in care at a hospital.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Hospital Equity Index (HEI) to the Hospital Inpatient Quality Reporting (HIQR) Program in support of an agency-wide strategic vision to achieve equity across the health care system. This index has not been active in a CMS quality reporting program to date but was originally published on the 2022 MUC list [MUC2022-058] as the Hospital Disparity Index, at which time it received conditional support pending reliability and validity testing as well as endorsement by a consensus-based entity (CBE). Notably, each of the measures included in the index has been individually endorsed by a CBE. The index is returning to the 2023 MUC list [MUC2023-139] and has been renamed HEI to aid interpretation of the index score in a more intuitive way (i.e., higher is better/more equitable). The following substantive changes have been made to the index:

- Inclusion criteria updated to include only hospitals that have at least 25 patients with a given risk factor and 12 patients without a given risk factor for any stratification variable
- Agency for Healthcare Research and Quality's Socio-economic status (AHRQ SES) Index replaced with Area Deprivation Index as a stratification variable.
- Two mortality measures—heart failure and pneumonia—added to the calculation.
- Imputed race and ethnicity removed as a demographic variable.

The final score will summarize results of the CMS Disparity Methods across a range of measures and sociodemographic variables to provide more accessible information about equity gaps within and across acute care hospitals.

Table 3.9.1. MUC2023-139 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-139	Description
Measure name	Hospital Equity Index
MUC ID	MUC2023-139
Cascade priority	Equity
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Yale/CORE
Program submitted to	Hospital Inpatient Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	Hospital Equity Summary Score (HESS)
Is this a new measure in this year's MUC list?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	Measure previously submitted to MAP, refined, and resubmitted per MAP recommendation.
Is the measure currently used in a CMS program?	No
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
History of endorsement	N/A
Path to endorsement	Unknown
Measure Specification Details	
Measure description	The HEI is a prototype method for a single score that summarizes several measurements of disparity in care at a hospital. The final score, normalized around a value of 0.0, will summarize results of the Centers for Medicare and Medicaid Services (CMS) Disparity Methods (stratified measure results) across nine measures and social and demographic risk factors, to provide more accessible information about variations in healthcare disparity across hospitals. The current HEI methodology includes seven readmission measures and two mortality measures, dual eligibility and the ADI. The readmission measures included in the HEI

CMS MERIT Submission Information MUC2023-139	Description
	currently have stratified results by DE confidentially reported to hospitals and are listed here: HEI readmission measure components. The HEI also additionally includes the HF and PN mortality measures and the ADI.
Data source	Administrative Data (non-claims); Claims Data
Level of analysis	Facility
Numerator	The HEI is a composite score and does not have a typical numerator. We are using this field to describe those hospitals that will obtain a score. The HEI includes hospitals that have patient populations that allow for calculation of both Within and Across Disparity Method for: • Dual enrollment in Medicare and Medicaid (DE) versus non DE patients. • High (>85) Area Deprivation Index (ADI) versus non-high ADI (<85) patients, as determined using 9-digit zip code. • This is operationalized as including at least one patient with a given social or demographic risk factor variable and one without.
Denominator	The HEI does not have a traditional numerator and denominator. We use this field to define currently included measures for which Within and Across Disparity Method results are calculated and combined for an overall HEI score. The HEI will include Within and Across Disparity Method results for the following measures for all hospitals, provided they meet the inclusion criteria specified above: • Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Acute Myocardial Infarction (AMI) Hospitalization, AMI Readmission measure, NQF ID# 0505, CMI ID# 80; • Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Coronary Artery Bypass Graft (CABG) Surgery, CABG Readmission measure, NQF ID# 2515, CMIT ID# 1426; • Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization, COPD Readmission measure, NQF ID# 1891, CMIT ID# 1455; • Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Heart Failure (HF) Hospitalization, HF Readmission measure, NQF ID# 0330, CMIT ID# 78; • Hospital 30-Day, All-Cause, Risk-Standardization Readmission Rate (RSRR) Following Pneumonia (PN) Hospitalization, PN Readmission Measure, NQF ID# 0506, CMIT ID# 83; • Hospital- Level 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) Following Elective Primary Total Hip Arthroplasty (THA) and/or Total Knee Arthroplasty (TKA), THA/ TKA Readmission measure, NQF ID# 1551, CMIT ID# 899;

CMS MERIT Submission Information MUC2023-139	Description
	• Hospital-Wide 30-Day, All-Cause, Risk-Standardized Readmission Rate Following Hospitalization, HWR Measure, NQF ID# 1789, CMIT ID# 2710; this measure is included as 5 specialty cohorts • Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Heart Failure (HF) Hospitalization, CBE ID# 0229, CMIT ID#335; Hospital 30-Day, All-Cause, Risk-Standardization Mortality Rate (RSMR) Following Pneumonia (PN) Hospitalization, CBE ID# 0468, CMIT ID#336.For the development and testing of the HEI, we used the results of these measures for Reporting Year (RY) 2023.
Numerator exclusions	Hospitals without at least one patient with the risk factor and one patient without the risk factor for any risk factor for which stratification is implemented will not be eligible for disparity evaluation because we cannot examine disparities.
Denominator exclusions	N/A
Denominator exceptions	N/A
Risk adjustment	Yes
Development status	Fully Developed
If not fully developed, development stage	N/A
Target population	Hospitals serving Medicare Fee-for-Service patients
Measure type	Outcome
Is the measure a composite or component of a composite?	Yes
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.9.2. MUC2023-139 Hospital Equity Index (HEI) Measure Evaluation

MUC2023-139 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Patients impacted by social drivers of health often experience lower quality of care and worse outcomes than other patients.[95,96,97] The HEI is a prototype method for a single score that summarizes several measurements of disparity in care at a hospital. The final score, centered around a value of 0.00 due to the method of standardization used, will summarize results of the Centers for Medicare and Medicaid Services (CMS) Disparity Methods (stratified measure results) across a range of measures and social and demographic risk factors, to provide more accessible information about variations in healthcare disparity across hospitals.	--	The study population is the same as the target quality program population.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The measure captures disparities in quality of care across a range of conditions, outcomes, and disparity factors.	By definition the measured patients are few in number; many hospitals may have too few to measure reliably.	Unable to determine if persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.

[95] Buntin, M. B., & Ayanian, J. Z. (2017). Social risk factors and equity in Medicare payment. *The New England Journal of Medicine, 376*(6), 507-510.
[96] Lindenauer, P. K., Lagu, T., Rothberg, M. B., Avrunin, J., Pekow, P. S., Wang, Y., & Krumholz, H. M. (2013). Income inequality and 30-day outcomes after acute myocardial infarction, heart failure, and pneumonia: retrospective cohort study. *BMJ*, 346.
[97] Trivedi, A. N., Nsa, W., Hausmann, L. R., Lee, J. S., Ma, A., Bratzler, D. W., Mor, M.K., Baus, K., Larbi, F., & Fine, M. J. (2014). Quality and equity of care in US hospitals. *New England Journal of Medicine, 371*(24), 2298-2308.

MUC2023-139 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Electronically derived administrative claims.		Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Data submitted by the measure developer shows differences in measure performance. Overall mean performance was -0.050 with a standard deviation of 0.481. The minimum performance was -3.669, the 10th percentile performance was -0.611, median performance was 0.017, 90th percentile performance was 0.445, and maximum performance was 1.300. 3 of 3 (100%): number of patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar conditions.	--	All of the performance improvements to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Measure is an aggregation of scientifically sound metrics.	Entity-level reliability testing not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Technical Expert Panel surveyed & rated the HEI to have face validity.	Entity-level validity testing not reported. No explicit articulation of the way an entity may improve performance on the measure focus.	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population.

MUC2023-139 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
			There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	HEI aggregates existing stratified measures; those stratified measures adjust for a range of patient demographic and clinical factors using separate models for each measure, social risk factor, and stratification method (within facility, across facility).	Only risk factors captured by claims data were available. Unavailable risk factors such as patient frailty or social support could confound the relationship between social risk factors and outcomes. It is anticipated that the omission of these unavailable risk factors would bias the within-disparity methods away from the null. Hospitals without at least one patient with the risk factor and one patient without the risk factor for any risk factor for which stratification is implemented will not be eligible for disparity evaluation because developer cannot examine disparities.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	HEI is being proposed as a prototype for evaluation; CMS anticipated using this Index in HIQR to promote high equity care to beneficiaries. 3 of 3 (100%) number of measured entities (or others) who responded when asked if information produced by the performance measure is easy to understand AND useful for decision-making.	There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve composite measures, like the HEI, are beneficial in that they summarize detailed information to give a high-level picture of multiple intersecting variables; however, they can be confusing for facilities to interpret in the absence of detailed explanation. CMS will take this into account in providing feedback reports to hospitals and aims to be responsive to any other issues that arise in use of such a measure.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-139 Measure Reliability

Reliability was not analyzed for this measure according to the report provided. There is not enough information to simulate or assess reliability for this measure.

3.10 MUC2023-146 Care Coordination - Hospital Patient Experience of Care*

Description: The Care Coordination – Hospital Patient Experience of Care measure is a newly developed sub-measure to be added to the HCAHPS Survey measure and is composed of the three following new survey questions or items, which are also referred to as survey items.

Measure Type: PRO-PM or Patient Experience of Care

Level of Analysis: Facility

Data Source(s): New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding four new or revised components to the HCAHPS Survey for the Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (VBP) Program, and PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program measure set. It is important to note that because HCAHPS is counted as one measure in the programs in which it is used, we refer to new and existing components as HCAHPS "sub-measures." Existing sub-measures have been finalized for adoption in the Hospital IQR Program since FY 2008, included in the Hospital Value-Based Purchasing (HVBP) Program in FY 2013 and in the PCHQR Program since FY 2016. Due to statutory requirements, the revised measure and sub-measures will be required to be publicly reported under the Hospital IQR program for a mandatory 1-year period prior to implementation in the HVBP. The HCAHPS Survey produces systematic and comparable information about patients' experience of hospital care. Its inclusion, and ongoing modification, in the Hospital IQR, Hospital VBP, and PCHQR Programs furthers goals of the CMS National Quality Strategy to foster equity and engagement as well as advances the Universal Foundation domain of person-centered care. CMS is specifically considering sub-measures that capture experience of patients and families around care coordination, hospital environment, staff responsiveness, and communication of information at discharge. Understanding such experiences and holding providers accountable to performance is critical for hospitals to meaningfully advance quality, safety, *and* equity.

Table 3.10.1. MUC2023-146 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-146	Description
Measure name	Care Coordination - Hospital Patient Experience of Care
MUC ID	MUC2023-146 (HCAHPS sub-measure)
Cascade priority	Person-Centered Care
Measure steward	Centers for Medicare & Medicaid Services

CMS MERIT Submission Information MUC2023-146	Description
Measure developer	Centers for Medicare & Medicaid Services
Program submitted to	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	No
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	Hospital Inpatient Quality Reporting Program (Section 1886 (vii)(II)) and Hospital Value Based Purchasing (Sec. 3001 PPACA)
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
Measure specification details	
Measure description	The Care Coordination – Hospital Patient Experience of Care sub-measure is a newly developed sub-measure to be added to the HCAHPS Survey measure and is composed of the 3 following new survey questions, which are also referred to as survey items. During this hospital stay, how often were doctors, nurses and other hospital staff informed and up to date about your care? During this hospital stay, how often did doctors, nurses and other hospital staff work well together to care for you? Did doctors, nurses or other hospital staff work with you and your family or caregiver in making plans for your care after you left the hospital?
Data source	New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys
Level of analysis	Facility
Numerator	CMS calculates HCAHPS sub-measure scores using linear means. For the Care Coordination – Hospital Patient Experience of Care sub-measure items, response options are "Never" = 1; "Sometimes" = 2; "Usually" = 3; and "Always" = 4 for the items: "During this hospital stay, how often were doctors, nurses, and other hospital staff informed and up-to-date about your care?"

CMS MERIT Submission Information MUC2023-146	Description
	and “During this hospital stay, how often did doctors, nurses, and other hospital staff work well together to care for you?” For the item, “Did doctors, nurses or other hospital staff work with you and your family or caregiver in making plans for your care after you left the hospital?” the response options are “Yes, definitely” = 3; “Yes, somewhat” = 2; and “No” = 1. The item responses are averaged at the hospital level to form the hospital-level mean for each measure. The result is converted to a value on a scale from 0 to 100.
Denominator	The denominator for the Care Coordination – Hospital Patient Experience of Care sub-measure is the number of respondents who completed the survey and who answered at least one item within the Care Coordination sub-measure.
Numerator exclusions	N/A
Denominator exclusions	The Care Coordination – Hospital Patient Experience of Care sub-measure is an element of the HCAHPS Survey measure. In order to be eligible for the HCAHPS Survey, a patient must meet the following criteria: ● Eighteen (18) years or older at the time of admission ● Admission includes at least one overnight stay in the hospital ● Non-psychiatric MS-DRG/principal diagnosis at discharge ● Alive at the time of discharge There is a two-stage process for determining whether a discharged patient can be included in the HCAHPS Sample Frame. The first stage is to determine whether the discharged patient meets the HCAHPS eligibility criteria, listed above. If the patient meets the eligibility criteria, then a second set of criteria is applied: Exclusions from the HCAHPS Survey Patients who meet the eligible population criteria outlined above are to be included in the HCAHPS Sample Frame. However, there are a few categories of otherwise eligible patients who are excluded from the sample frame. These are: ● “No-Publicity” patients – Patients who request that they not be contacted ● Court/Law enforcement patients (i.e., prisoners); this does not include patients residing in halfway houses ● Patients with a foreign home address (the U.S. territories – Virgin Islands, Puerto Rico, Guam, American Samoa, and Northern Mariana Islands - are not considered foreign addresses; and therefore, are not excluded) ● Patients discharged to hospice care (hospice-home or hospice-medical facility) ● Patients who are excluded because of state regulations

CMS MERIT Submission Information MUC2023-146	Description
	● Patients discharged to nursing homes and skilled nursing facilities For details about each category of eligibility or inclusion, please refer to the HCAHPS Quality Assurance Guidelines, V18.0, which can be found on the official HCAHPS On-Line Web site at: https://hcahpsonline.org/en/quality-assurance/.
Denominator exclusions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer types
Measure type	PRO-PM or Patient Experience of Care
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.10.2. MUC2023-146 Care Coordination - Hospital Patient Experience of Care Measure Evaluation

MUC2023-146 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	The need for a measure of care coordination among hospital staff was identified through literature review, focus groups and cognitive interviews with patients and caregivers, and discussions with technical experts.	Details of literature review conducted were not submitted.	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.

MUC2023-146 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Cronbach's alpha was 0.765 and supports the use of the Care Coordination – Hospital Patient Experience of Care sub-measure (MERIT).	Exclusions: Patients with a primary psychiatric or substance abuse diagnosis are ineligible because the current HCAHPS instrument is not designed to address the behavioral health issues pertinent to psychiatric patients. Non-publicity patients - patients who request that they not be contacted (e.g. a celebrity), court/law enforcement patients, patients with a foreign home address, patients discharged to hospice care, patients who are excluded because of state regulations, and patients discharged to nursing homes and skilled nursing facilities are excluded due to legal or logistical barriers to contacting such patients in a timely manner.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	HCAHPS survey may currently be administered in the following modes: 1) Mail only, 2) Telephone only, 3) Mixed mode – mail with telephone follow-up of non-respondents. In addition, three new modes of survey administration will become available for hospitals to use beginning in January 2025: 1) Web with mail follow-up of non-respondents, 2) Web with telephone follow-up of non-respondents, and 3) Web with mail and then telephone follow-up of non-respondents.	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	For almost all existing sub-measures, urban and for-profit hospitals do not perform as well as rural and non-profit and government hospitals. Testing results submitted by the measure developer show among the 46 hospitals in 2021 HCAHPS Survey mode experiment the mean score on the Care Coordination – Hospital Patient Experience of Care sub-measure was 81.3 with a standard	--	All the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-146 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	deviation of 3.2. The minimum score was 72.2, the 10th percentile score was 76.6, the median score was 81.7, the 90th percentile score was 85.0, and the maximum score was 85.0. 32 of 32 (100%) patients and/or caregivers responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar conditions.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	The Care Coordination – Hospital Patient Experience of Care sub-measure exhibits hospital-level reliability of 0.792 at the expected average number of completed surveys per hospital.	--	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: Pearson correlation between the linear mean score for Care Coordination - Hospital Patient Experience of Care sub-measure and the scores for the Overall Hospital Rating (0.843). Analysis of over 3,900 HCAHPS-participating US hospitals revealed that the HCAHPS Summary Score, an average of nine HCAHPS sub-measures, showed a mean improvement of 5.2 top-box points from 2007 to 2019, (where differences of 5, 3, and 1 points are considered large, medium, and small). The mean of the proposed sub-measure is substantially below the ceiling based on these standard differences. Hospitals will improve their scores by undertaking activities to improve care related to the focus of the items. CAHPS Quality Improvement resources are available at https://ahrq.cahps.gov.	--	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-146 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	For the HCAHPS patient-mix adjustment (PMA) model, developers sought important and statistically significant predictors of patients' HCAHPS ratings that also vary meaningfully across hospitals. **Person factors:** age, language spoken at home (Spanish, Chinese, and Other language, with English as the reference), education, sex by service line (male-medical, male-surgical, female-surgical, maternity, with female-medical as the referent), overall health, mental health, maternity service line by age interaction, surgery service line by age interaction, response percentile, and unplanned stay. **Entity factors:** The adjustment model also included hospital survey mode and fixed hospital effects. The SD of total adjustment from PMA in terms of hospital-level SDs calculated is 0.25, indicating small-to-moderate adjustment and adequate discrimination. Patient mix adjustment was applied by estimating coefficients in each quarter of data, rather than relying on prior data, which guarantees complete patient-level calibration.	--	N/A

MUC2023-146 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	The HCAHPS 2.0 Survey has been reviewed and approved by AHRQ. All experts and patients identified the Care Coordination – Hospital Patient Experience of Care sub-measure as an indicator of quality of care received during an inpatient stay. They also indicated that this sub-measure could differentiate poor quality care from higher quality care (N=83). The HCAHPS survey is available in the following languages: English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic. Quality improvement resources are available at https://ahrq.cahps.gov.	As with other quality measures, this sub-measure may lead to an emphasis on certain aspects of patient experience over those aspects not specifically named. However, because this aspect of patient experience has been deemed important by patients, patient advocates, and other experts, we see the adverse consequences of such an emphasis as minimal.	There is an explicit articulation of the resources and context that might facilitate improvement within the quality program population.

MUC2023-146 Measure Reliability

The performance score is the mean response to the corresponding survey questions, converted to a 0 to 100 scale.

The measure report indicates a median signal-to-noise ratio of 0.792. There is no indication of the method used to calculate the signal-to-noise. The corresponding psychometric properties documents indicate n=300 for the same reliability values. The column is labeled “Composite Reliability (Measure Completes, MC),” which may not be a standard signal-to-noise calculation. More information from the developer is required before the reliability result can be interpreted.

3.11 MUC2023-147 Restfulness of Hospital Environment – Hospital Patient Experience of Care*

Description: The Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure is a newly developed sub-measure to be added to the HCAHPS Survey measure and is composed of the following three survey questions or items (two new items and one individual item on current survey), which are also referred to as survey items.

Measure Type: PRO-PM or Patient Experience of Care

Level of Analysis: Facility

Data Source(s): New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding four new or revised components to the HCAHPS Survey for the Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (VBP) Program, and PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program measure set. It is important to note that because HCAHPS is counted as one measure in the programs in which it is used, we refer to new and existing components as HCAHPS "sub-measures." Existing sub-measures have been finalized for adoption in the Hospital IQR Program since FY 2008, included in the Hospital Value-Based Purchasing (HVBP) Program in FY 2013 and in the PCHQR Program since FY 2016. Due to statutory requirements, the revised measure and sub-measures will be required to be publicly reported under the Hospital IQR program for a mandatory 1-year period prior to implementation in the HVBP. The HCAHPS Survey produces systematic and comparable information about patients' experience of hospital care. Its inclusion, and ongoing modification, in the Hospital IQR, Hospital VBP, and PCHQR Programs furthers goals of the CMS National Quality Strategy to foster equity and engagement as well as advances the Universal Foundation domain of person-centered care. CMS is specifically considering sub-measures that capture experience of patients and families around care coordination, hospital environment, staff responsiveness, and communication of information at discharge. Understanding such experiences and holding providers accountable to performance is critical for hospitals to meaningfully advance quality, safety, *and* equity.

Table 3.11.1. MUC2023-147 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-147	Description
Measure name	Restfulness of Hospital Environment – Hospital Patient Experience of Care
MUC ID	MUC2023-147 (HCAHPS sub-measure)
Cascade priority	Person-Centered Care
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Centers for Medicare & Medicaid Services
Program submitted to	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	No
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	Hospital Inpatient Quality Reporting Program (Section 1886 (vii)(II)) and Hospital Value Based Purchasing (Sec. 3001 PPACA)
CBE endorsement status	N/A
CBE endorsement number if applicable	N/A
History of endorsement	Not Endorsed
Path to endorsement	Unknown
Measure specification details	
Measure description	The Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure is a newly developed sub-measure to be added to the HCAHPS Survey measure and is composed of the following three survey questions or items (two new items and one individual item on current survey), which are also referred to as survey items. During this hospital stay, how often were you able to get the rest you needed? During this hospital stay, did doctors, nurses, and other hospital staff help you to rest and recover? During this hospital stay, how often was the area around your room quiet at night?

Data source	New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys
Level of analysis	Facility
Numerator	CMS calculates HCAHPS sub-measure scores using linear means. For the Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure items, response options are “Never” = 1; “Sometimes” = 2; “Usually” = 3; and “Always” = 4. The item responses are averaged at the hospital level to form the hospital-level mean for each measure. The result is converted to a 0 to 100 scale.
Denominator	The denominator for the Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure is the number of respondents who completed the survey and who answered at least one item within the Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure.
Numerator exclusions	N/A
Denominator exclusions	The Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure is an element of the HCAHPS Survey measure. In order to be eligible for the HCAHPS Survey, a patient must meet the following criteria: ● Eighteen (18) years or older at the time of admission ● Admission includes at least one overnight stay in the hospital ● Non-psychiatric MS-DRG/principal diagnosis at discharge ● Alive at the time of discharge There is a two-stage process for determining whether a discharged patient can be included in the HCAHPS Sample Frame. The first stage is to determine whether the discharged patient meets the HCAHPS eligibility criteria, listed above. If the patient meets the eligibility criteria, then a second set of criteria is applied: Exclusions from the HCAHPS Survey Patients who meet the eligible population criteria outlined above are to be included in the HCAHPS Sample Frame. However, there are a few categories of otherwise eligible patients who are excluded from the sample frame. These are: ● “No-Publicity” patients – Patients who request that they not be contacted ● Court/Law enforcement patients (i.e., prisoners); this does not include patients residing in halfway houses ● Patients with a foreign home address (the U.S. territories – Virgin Islands, Puerto Rico, Guam, American Samoa, and Northern Mariana Islands - are not considered foreign addresses; and therefore, are not excluded) ● Patients discharged to hospice care (hospice-home or hospice-medical facility) ● Patients who are excluded because of state regulations ● Patients discharged to nursing homes and skilled nursing facilities

	For details about each category of eligibility or inclusion, please refer to the HCAHPS Quality Assurance Guidelines, V18.0, which can be found on the official HCAHPS On-Line Web site at: https://hcahpsonline.org/en/quality-assurance/.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer types
Measure type	PRO-PM or Patient Experience of Care
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.11.2. MUC2023-147 Restfulness of Hospital Environment – Hospital Patient Experience of Care Measure Evaluation

MUC2023-147 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	--	Details of literature review conducted were not submitted.	Unable to evaluate alignment between the study population and the target quality program population.

MUC2023-147 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Cronbach's alpha was 0.735 and supports the use of the Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure (MERIT).	Exclusions: Patients with a primary psychiatric or substance abuse diagnosis are ineligible because the current HCAHPS instrument is not designed to address the behavioral health issues pertinent to psychiatric patients. Non-publicity patients—patients who request that they not be contacted (e.g. a celebrity), court/law enforcement patients, patients with a foreign home address, patients discharged to hospice care, patients who are excluded because of state regulations, and patients discharged to nursing homes and skilled nursing facilities are excluded due to legal or logistical barriers to contacting such patients in a timely manner.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	HCAHPS survey may currently be administered in the following modes: 1) Mail only, 2) Telephone only, 3) Mixed mode – mail with telephone follow-up of non-respondents. In addition, three new modes of survey administration will become available for hospitals to use beginning in January 2025: 1) Web with mail follow-up of non-respondents, 2) Web with telephone follow-up of non-respondents, and 3) Web with mail and then telephone follow-up of non-respondents.	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	For almost all existing sub-measures, urban and for-profit hospitals do not perform as well as rural and non-profit and government hospitals. Data submitted by the measure developer show the overall mean performance score is 77.0 with a standard deviation of 3.5. The minimum score was 69.0, the 10th percentile score was 72.1, the median	--	All of the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-147 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	score was 77.8, the 90th percentile score was 80.9, and the maximum score was 82.9. 32 of 32 (100%) patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) said it is important to know about AND can help improve care for patients in similar situations or with similar conditions.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Data submitted by the measure developer show the Restfulness of Hospital Environment – Hospital Patient Experience of Care sub-measure exhibits hospital-level reliability of 0.870 at the expected average number of completed surveys per hospital.	--	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: Pearson correlation between the linear mean score for Restfulness of Hospital Environment - Hospital Patient Experience of Care sub-measure and the scores for the Overall Hospital Rating (0.638). Analysis of over 3,900 HCAHPS-participating US hospitals revealed that the HCAHPS Summary Score, an average of nine HCAHPS sub-measures, showed a mean improvement of 5.2 top-box points from 2007 to 2019, (where differences of 5, 3, and 1 points are considered large, medium, and small). The mean of the proposed sub-measure is substantially below the ceiling based on these standard differences. Hospitals will improve their scores by undertaking activities to improve care related to the focus of the items. CAHPS Quality Improvement resources are available at https://ahrq.cahps.gov.	--	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-147 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	For the HCAHPS patient-mix adjustment (PMA) model, developers sought important and statistically significant predictors of patients' HCAHPS ratings that also vary meaningfully across hospitals. **Person factors:** age, language spoken at home (Spanish, Chinese, and Other language, with English as the reference), education, sex by service line (male-medical, male-surgical, female-surgical, maternity, with female-medical as the referent), overall health, mental health, maternity service line by age interaction, surgery service line by age interaction, response percentile, and unplanned stay. **Entity factors:** The adjustment model also included hospital survey mode and fixed hospital effects. The SD of total adjustment from PMA in terms of hospital-level SDs calculated is 0.25, indicating small-to-moderate adjustment and adequate discrimination. Patient mix adjustment was applied by estimating coefficients in each quarter of data, rather than relying on prior data, which guarantees complete patient-level calibration.	--	N/A

MUC2023-147 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	The HCAHPS 2.0 Survey has been reviewed and approved by AHRQ. All experts and patients identified the Restfulness of Hospital Environment - Hospital Patient Experience of Care sub-measure as an indicator of quality of care received during an inpatient stay. They also indicated that this sub-measure could differentiate poor quality care from higher quality care (N=72). The HCAHPS survey is available in the following languages: English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic. Quality improvement resources are available at https://ahrq.cahps.gov.	As with other quality measures, this sub-measure may lead to an emphasis on certain aspects of patient experience over those aspects not specifically named. However, because this aspect of patient experience has been deemed important by patients, patient advocates, and other experts, we see the adverse consequences of such an emphasis as minimal.	There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

MUC2023-147 Measure Reliability

The performance score is the mean response to the corresponding survey questions, converted to a 0 to 100 scale.

The measure report indicates a median signal-to-noise ratio of 0.87. There is no indication of the method used to calculate the signal-to-noise. The corresponding psychometric properties documents indicate n=300 for the same reliability values. The column is labeled “Composite Reliability (Measure Completes, MC),” which may not be a standard signal-to-noise calculation. More information from the developer is required before the reliability result can be interpreted.

3.12 MUC2023-148 Responsiveness of Hospital Staff - Hospital Patient Experience of Care*

Description: The Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure is a revised sub-measure in the HCAHPS Survey measure and is composed of the following two survey questions or items (one new item and one item on the current survey), which are also referred to as survey items.

Measure Type: PRO-PM or Patient Experience of Care

Level of Analysis: Facility

Data Source(s): New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding four new or revised components to the HCAHPS Survey for the Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (VBP) Program, and PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program measure set. It is important to note that because HCAHPS is counted as one measure in the programs in which it is used, we refer to new and existing components as HCAHPS "sub-measures." Existing sub-measures have been finalized for adoption in the Hospital IQR Program since FY 2008, included in the Hospital Value-Based Purchasing (HVBP) Program in FY 2013, and in the PCHQR Program since FY 2016. Due to statutory requirements, the revised measure and sub-measures will be required to be publicly reported under the Hospital IQR program for a mandatory 1-year period prior to implementation in the HVBP. The HCAHPS Survey produces systematic and comparable information about patients' experience of hospital care. Its inclusion, and ongoing modification, in the Hospital IQR, Hospital VBP, and PCHQR Programs furthers goals of the CMS National Quality Strategy to foster equity and engagement as well as advances the Universal Foundation domain of person-centered care. CMS is specifically considering sub-measures that capture experience of patients and families around care coordination, hospital environment, staff responsiveness, and communication of information at discharge. Understanding such experiences and holding providers accountable to performance is critical for hospitals to meaningfully advance quality, safety, *and* equity.

Table 3.12.1. MUC2023-148 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-148	Description
Measure name	Responsiveness of Hospital Staff - Hospital Patient Experience of Care
MUC ID	MUC2023-148 (HCAHPS sub-measure)
Cascade priority	Person-Centered Care

CMS MERIT Submission Information MUC2023-148	Description
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Centers for Medicare & Medicaid Services
Program submitted to	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	Measure currently used in a CMS program, but the measure is undergoing substantial change.
Any other program the measure is in use	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Is this measure being proposed to meet a statutory requirement?	Hospital Inpatient Quality Reporting Program (Section 1886 (vii)(II)) and Hospital Value Based Purchasing (Sec. 3001 PPACA)
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE 0166
History of endorsement	Initial Endorsement: 05/2010 Most Recent Endorsement: 2019
Path to endorsement	Anticipated CDP endorsement review: 2024
Measure specification details	
Measure description	The Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure is a revised sub-measure in the HCAHPS Survey measure and is composed of the following two survey questions or items (one new item and one item on the current survey), which are also referred to as survey items. During this hospital stay, when you asked for help right away, how often did you get help as soon as you needed? How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?
Data source	New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys
Level of analysis	Facility

CMS MERIT Submission Information MUC2023-148	Description
Numerator	CMS calculates the HCAHPS sub-measure scores using linear means. For the Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure items, response options are "Never" = 1; "Sometimes" = 2; "Usually" = 3; and "Always" = 4. The item responses are averaged at the hospital level to form the hospital-level mean for each measure. The result is converted to a 0 to 100 scale.
Denominator	The denominator for the Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure is the number of respondents who completed the survey and who answered at least one item within the Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure. A completed survey is one in which at least 50 percent of the questions applicable to all patients is answered.
Numerator exclusions	N/A
Denominator exclusions	The Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure is an element of the HCAHPS Survey measure. In order to be eligible for the HCAHPS Survey, a patient must meet the following criteria: ● Eighteen (18) years or older at the time of admission ● Admission includes at least one overnight stay in the hospital ● Non-psychiatric MS-DRG/principal diagnosis at discharge ● Alive at the time of discharge There is a two-stage process for determining whether a discharged patient can be included in the HCAHPS Sample Frame. The first stage is to determine whether the discharged patient meets the HCAHPS eligibility criteria, listed above. If the patient meets the eligibility criteria, then a second set of criteria is applied: Exclusions from the HCAHPS Survey Patients who meet the eligible population criteria outlined above are to be included in the HCAHPS Sample Frame. However, there are a few categories of otherwise eligible patients who are excluded from the sample frame. These are: ● "No-Publicity" patients – Patients who request that they not be contacted ● Court/Law enforcement patients (i.e., prisoners); this does not include patients residing in halfway houses ● Patients with a foreign home address (the U.S. territories – Virgin Islands, Puerto Rico, Guam, American Samoa, and Northern Mariana Islands - are not considered foreign addresses; and therefore, are not excluded) ● Patients discharged to hospice care (hospice-home or hospice-medical facility) ● Patients who are excluded because of state regulations ● Patients discharged to nursing homes and skilled nursing facilities

CMS MERIT Submission Information MUC2023-148	Description
	For details about each category of eligibility or inclusion, please refer to the HCAHPS Quality Assurance Guidelines, V18.0, which can be found on the official HCAHPS On-Line Web site at: https://hcahpsonline.org/en/quality-assurance/.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer types
Measure type	PRO-PM or Patient Experience of Care
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.12.2. MUC2023-148 Responsiveness of Hospital Staff - Hospital Patient Experience of Care Measure Evaluation

MUC2023-148 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	--	Details of literature review conducted were not submitted.	Unable to evaluate alignment between the study population and the target quality program population.

MUC2023-148 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Cronbach's alpha was 0.749 and supports the use of the Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure (MERIT).	Exclusions: Patients with a primary psychiatric or substance abuse diagnosis are ineligible because the current HCAHPS instrument is not designed to address the behavioral health issues pertinent to psychiatric patients. Non-publicity patients—patients who request that they not be contacted (e.g. a celebrity), court/law enforcement patients, patients with a foreign home address, patients discharged to hospice care, patients who are excluded because of state regulations, and patients discharged to nursing homes and skilled nursing facilities are excluded due to legal or logistical barriers to contacting such patients in a timely manner.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Three new modes of survey administration will become available for hospitals to use beginning in January 2025: 1) Web with mail follow-up of non-respondents, 2) Web with telephone follow-up of non-respondents, and 3) Web with mail and then telephone follow-up of non-respondents.	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	For almost all existing sub-measures, urban and for-profit hospitals do not perform as well as rural and non-profit and government hospitals. Among the 46 hospitals in the 2021 HCAHPS Survey mode experiment, the mean score on the Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure was 81.8 with a standard deviation of 3.2. The minimum performance reported was 72.9, 10th percentile performance was 77.5, median performance was 82.0, 90th percentile	--	All the performance improvements to the benchmark have a significant impact on quality program population outcomes.

MUC2023-148 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	**External Validity** (suitability for selected quality program and population)
	performance was 85.6, and maximum performance was 86.7. 32 of 32 (100%) patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) said it is important to know about AND can help improve care for patients in similar situations or with similar conditions.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Data submitted by the measure developer show The Responsiveness of Hospital Staff – Hospital Patient Experience of Care sub-measure exhibits hospital-level reliability of 0.786 at the expected average number of completed surveys per hospital.	--	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: Pearson correlation between the linear mean score for Responsiveness of Hospital Staff - Hospital Patient Experience of Care sub-measure and the scores for the Overall Hospital Rating (0.779). Analysis of over 3,900 HCAHPS-participating US hospitals revealed that the HCAHPS Summary Score, an average of nine HCAHPS sub-measures, showed a mean improvement of 5.2 top-box points from 2007 to 2019, (where differences of 5, 3, and 1 points are considered large, medium, and small). The mean of the proposed sub-measure is substantially below the ceiling based on these standard differences. Hospitals will improve their scores by undertaking activities to improve care related to the focus of the items. CAHPS Quality Improvement resources are available at https://ahrq.cahps.gov.	--	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-148 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	For the HCAHPS patient-mix adjustment (PMA) model, developers sought important and statistically significant predictors of patients' HCAHPS ratings that also vary meaningfully across hospitals. **Person factors:** age, language spoken at home (Spanish, Chinese, and Other language, with English as the referent), education, sex by service line (male-medical, male-surgical, female-surgical, maternity, with female-medical as the referent), overall health, mental health, maternity service line by age interaction, surgery service line by age interaction, response percentile, and unplanned stay. **Entity factors:** The adjustment model also included hospital survey mode and fixed hospital effects. The SD of total adjustment from PMA in terms of hospital-level SDs calculated is 0.25, indicating small-to-moderate adjustment and adequate discrimination. Patient mix adjustment was applied by estimating coefficients in each quarter of data, rather than relying on prior data, which guarantees complete patient-level calibration.	No explicit rationale for confounders included in the model. No empirical evidence of discrimination, calibration, or goodness-of-fit.	N/A

MUC2023-148 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	The HCAHPS 2.0 Survey has been reviewed and approved by AHRQ. All experts and patients identified the Responsiveness of Hospital Staff - Hospital Patient Experience of Care sub-measure as an indicator of quality of care received during an inpatient stay. They also indicated that this sub-measure could differentiate poor quality care from higher quality care (N=60). The HCAHPS survey is available in the following languages: English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic. Quality improvement resources are available at https://ahrq.cahps.gov.	As with other quality measures, this sub-measure may lead to an emphasis on certain aspects of patient experience over those aspects not specifically named. However, because this aspect of patient experience has been deemed important by patients, patient advocates, and other experts, we see the adverse consequences of such an emphasis as minimal.	There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

MUC2023-148 Measure Reliability

The performance score is the mean response to the corresponding survey questions, converted to a 0 to 100 scale.

The measure report indicates a median signal-to-noise ratio of 0.786.There is no indication of the method used to calculate the signal-to-noise. The corresponding psychometric properties documents indicate n=300 for the same reliability values. The column is labeled “Composite Reliability (Measure Completes, MC),” which may not be a standard signal-to-noise calculation. More information from the developer is required before the reliability result can be interpreted.

3.13 MUC2023-149 Information about Symptoms – Hospital Patient Experience of Care Standalone Item*

Description: The Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure is a new sub-measure in the HCAHPS Survey measure and is composed of the following new item: "During this hospital stay, did doctors, nurses, or other hospital staff give your family or caregiver enough information about what symptoms or health problems to watch for after you left the hospital?"

Measure Type: PRO-PM or Patient Experience of Care

Level of Analysis: Facility

Data Source(s): New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding four new or revised components to the HCAHPS Survey for the Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (VBP) Program, and PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program measure set. It is important to note that because HCAHPS is counted as one measure in the programs in which it is used, we refer to new and existing components as HCAHPS "sub-measures." Existing sub-measures have been finalized for adoption in the Hospital IQR Program since FY 2008, included in the Hospital Value-Based Purchasing (HVBP) Program in FY 2013, and in the PCHQR Program since FY 2016. Due to statutory requirements, the revised measure and sub-measures will be required to be publicly reported under the Hospital IQR program for a mandatory 1-year period prior to implementation in the HVBP. The HCAHPS Survey produces systematic and comparable information about patients' experience of hospital care. Its inclusion, and ongoing modification, in the Hospital IQR, Hospital VBP, and PCHQR Programs furthers goals of the CMS National Quality Strategy to foster equity and engagement as well as advances the Universal Foundation domain of person-centered care. CMS is specifically considering sub-measures that capture experience of patients and families around care coordination, hospital environment, staff responsiveness, and communication of information at discharge. Understanding such experiences and holding providers accountable to performance is critical for hospitals to meaningfully advance quality, safety, *and* equity.

Table 3.13.1. MUC2023-149 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-149	Description
Measure name	Information about Symptoms – Hospital Patient Experience of Care Standalone Item
MUC ID	MUC2023-149 (HCAHPS sub-measure)
Cascade priority	Person-Centered Care

CMS MERIT Submission Information MUC2023-149	Description
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Centers for Medicare & Medicaid Services
Program submitted to	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	No
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	Hospital Inpatient Quality Reporting Program (Section 1886 (vii)(II)) and Hospital Value Based Purchasing (Sec. 3001 PPACA)
CBE endorsement status	N/A
CBE endorsement number if applicable	N/A
History of endorsement	Not Endorsed
Path to endorsement	Unknown
Measure specification details	
Measure description	The Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure is a new sub-measure in the HCAHPS Survey measure and is composed of the following new item: "During this hospital stay, did doctors, nurses, or other hospital staff give your family or caregiver enough information about what symptoms or health problems to watch for after you left the hospital?"
Data source	New sub-measure for HCAHPS Survey; Patient-Reported Data and Surveys
Level of analysis	Facility
Numerator	CMS calculates HCAHPS sub-measure scores using linear means. For the Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure, response options are "Yes, definitely" = 1; "Yes, somewhat" = 2; and "No" = 3. The item responses are

CMS MERIT Submission Information MUC2023-149	Description
	averaged at the hospital level to form the hospital-level mean for this measure. The result is converted to a 0 to 100 scale. The response option 4 = “I did not have family or a caregiver watch for symptoms or health problems” is removed from the valid response calculation.
Denominator	The denominator for the Information About Symptoms – Hospital Patient Experience of Care Standalone Item Coordination sub-measure is the number of respondents who completed the survey and who answered the Information About Systems – Hospital Patient Experience of Care Standalone Item, “During this hospital stay, did doctors, nurses or other hospital staff give your family or caregiver enough information about what symptoms or health problems to watch for after you left the hospital?” A completed survey is one in which at least 50 percent of the questions applicable to all patients is answered.
Numerator exclusions	N/A
Denominator exclusions	The Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure is an element of the HCAHPS Survey measure. In order to be eligible for the HCAHPS Survey, a patient must meet the following criteria: ● Eighteen (18) years or older at the time of admission ● Admission includes at least one overnight stay in the hospital ● Non-psychiatric MS-DRG/principal diagnosis at discharge ● Alive at the time of discharge There is a two-stage process for determining whether a discharged patient can be included in the HCAHPS Sample Frame. The first stage is to determine whether the discharged patient meets the HCAHPS eligibility criteria, listed above. If the patient meets the eligibility criteria, then a second set of criteria is applied: Exclusions from the HCAHPS Survey Patients who meet the eligible population criteria outlined above are to be included in the HCAHPS Sample Frame. However, there are a few categories of otherwise eligible patients who are excluded from the sample frame. These are: ● “No-Publicity” patients – Patients who request that they not be contacted ● Court/Law enforcement patients (i.e., prisoners); this does not include patients residing in halfway houses ● Patients with a foreign home address (the U.S. territories – Virgin Islands, Puerto Rico, Guam, American Samoa, and Northern Mariana Islands – are not considered foreign addresses; and therefore, are not excluded) ● Patients discharged to hospice care (hospice-home or hospice-medical facility) ● Patients who are excluded because of state regulations ● Patients discharged to nursing homes and skilled nursing facilities

CMS MERIT Submission Information MUC2023-149	Description
	For details about each category of eligibility or inclusion, please refer to the HCAHPS Quality Assurance Guidelines, V18.0, which can be found on the official HCAHPS On-Line Web site at: https://hcahpsonline.org/en/quality-assurance/.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer types
Measure type	PRO-PM or Patient Experience of Care
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.13.2. MUC2023-149 Information about Symptoms - Hospital Patient Experience of Care Standalone Item Measure Evaluation

MUC2023-149 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	--	Details of literature review conducted were not submitted.	Unable to evaluate alignment between the study population and the target quality program population.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The proposed measure correlates with Overall Hospital Rating and Hospital Recommend at 0.487 and 0.453, respectively, and supports the use of the Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure (MERIT).	Exclusions: Patients with a primary psychiatric or substance abuse diagnosis are ineligible because the current HCAHPS instrument is not designed to address the behavioral health issues pertinent to psychiatric patients. Non-publicity patients—patients who request that they not be contacted (e.g. a celebrity), court/law enforcement patients, patients with a foreign home address, patients discharged to hospice care, patients who are excluded because of state regulations, and patients discharged to nursing homes and skilled nursing facilities are excluded due to legal or logistical barriers to contacting such patients in a timely manner.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	HCAHPS survey may currently be administered in the following modes: 1) Mail only, 2) Telephone only, 3) Mixed mode – mail with telephone follow-up of non-respondents. In addition, three new modes of survey administration will become available for hospitals to use beginning in January 2025: 1) Web with mail follow-up of non-respondents, 2) Web with telephone follow-up of non-respondents, and 3) Web with mail and then telephone follow-up of non-respondents.	No explicit articulation of people, processes, or technology required.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. The people, processes, and technology required for data collection and reporting extrapolate to the quality program population.

MUC2023-149 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	For almost all existing sub-measures, urban and for-profit hospitals do not perform as well as rural and non-profit and government hospitals. Among the 46 hospitals in the 2021 HCAHPS Survey mode experiment, the mean score on the Information About Symptoms – Hospital Patient Experience of Care Standalone Item sub-measure was 80.5 with a standard deviation of 4.7. The minimum performance reported was 65.5, 10th percentile performance was 74.3, median performance was 81.1, 90th percentile performance was 86.1, and maximum performance was 87.3, 32 of 32 (100%) patients and/or caregivers responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar conditions.	--	All the performance improvements to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Data submitted by the measure developer show the Information About Symptoms sub-measure exhibits hospital-level reliability of 0.73 at the expected average number of completed surveys per hospital.	--	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric validity: Pearson correlation between the linear mean score for Information about Symptoms - Hospital Patient Experience of Care sub-measure and the scores for the Overall Hospital Rating (0.555). Analysis of over 3,900 HCAHPS-participating US hospitals revealed that the HCAHPS Summary Score, an average of nine HCAHPS sub-measures, showed a mean improvement of 5.2 top-box points from 2007 to 2019, (where differences of 5, 3, and 1	--	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-149 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	points are considered large, medium, and small). The mean of the proposed sub-measure is substantially below the ceiling based on these standard differences. Hospitals will improve their scores by undertaking activities to improve care related to the focus of the items. CAHPS Quality Improvement resources are available at https://ahrq.cahps.gov.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	For the HCAHPS patient-mix adjustment (PMA) model, developers sought important and statistically significant predictors of patients' HCAHPS ratings that also vary meaningfully across hospitals. **Person factors:** age, language spoken at home (Spanish, Chinese, and Other language, with English as the referent), education, sex by service line (male-medical, male-surgical, female-surgical, maternity, with female-medical as the referent), overall health, mental health, maternity service line by age interaction, surgery service line by age interaction, response percentile, and unplanned stay. **Entity factors:** The adjustment model also included hospital survey. The SD of total adjustment from PMA in terms of hospital-level SDs calculated is 0.30, indicating small-to-moderate adjustment and adequate discrimination. Patient mix adjustment was applied by estimating coefficients in each quarter of data, rather than relying on prior data, which guarantees complete patient-level calibration.	--	N/A

MUC2023-149 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	The HCAHPS 2.0 Survey has been reviewed and approved by AHRQ. All experts and patients identified the Information about Symptoms – Hospital Patient Experience of Care sub-measure as an indicator of quality of care received during an inpatient stay. They also indicated that this sub-measure could differentiate poor quality care from higher quality care (N=65). The HCAHPS survey is available in the following languages: English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic. Quality improvement resources are available at https://ahrq.cahps.gov.	As with other quality measures, this sub-measure may lead to an emphasis on certain aspects of patient experience over those aspects not specifically named. However, because this aspect of patient experience has been deemed important by patients, patient advocates, and other experts, we see the adverse consequences of such an emphasis as minimal.	There is an explicit articulation of the resources and context that might facilitate improvement *within* the quality program population.

MUC2023-149 Measure Reliability

The performance score is the mean response to the corresponding survey questions, converted to a 0 to 100 scale.

The measure report indicates median signal-to-noise ratio of 0.729.There is no indication of the method used to calculate the signal-to-noise. The corresponding psychometric properties documents indicate n=300 for the same reliability values. The column is labeled “Composite Reliability (Measure Completes, MC),” which may not be a standard signal-to-noise calculation. More information from the developer is required before the reliability result can be interpreted.

3.14 MUC2023-156 Screening for Social Drivers of Health (SDOH)*

Description: The Screening for SDOH is a process measure that assesses the total number of patients, who were 18 years or older on the date of service, screened for social risk factors (specifically, food insecurity, housing instability, transportation needs, utility difficulties, and interpersonal safety) during their outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH) care.

Measure Type: Process

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Electronic Clinical Data (non-EHR); Standardized Patient Assessments; Accountable Health Communities (AHC) Health-Related Social Needs (HRSN) Screening Tool; Patient Reported Data and Surveys. Due to variability across facility settings and the populations facilities serve, the developers are proposing to allow facilities flexibility with selection of tools to screen patients.

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Screening for Social Drivers of Health (SDOH) measure to the Ambulatory Surgical Center Quality Reporting Program, Hospital Outpatient Quality Reporting Program, and the Rural Emergency Hospital Quality Reporting Program measure sets in support of an agency-wide strategic vision to achieve equity across the health care system. This measure was finalized for adoption into the:

- Hospital IQR program from FY 2023 Inpatient Prospective Payment System (IPPS) and Long-term Care Hospital (LTCH) Prospective Payment System rule for CY 2024 reporting period.
- PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program from FY 2024 IPPS and LTCH Prospective Payment System rule with voluntary reporting for the FY 2026 program year.
- Inpatient Psychiatric Facilities (IPFQR) from FY 2024 IPF Prospective Payment System rule with voluntary reporting of CY 2024.
- Merit-based Incentives System (MIPS) from CY 2023 Physician Fee Schedule (PFS) rule for CY 2023 performance period.
- End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP) from CY 2024 ESRD PPS Final Rule for reporting beginning with PY 2026.

This measure is specifically important to include in these programs to drive comprehensive assessment of patients' drivers of health, including key health-related social needs, that may impact surgical care experience and recovery, and/or navigation of services across these settings. In that vein, inclusion of the measure also seeks to strengthen a facility's capacity to improve health care quality by providing more holistic, person-centered care. The REHQR program is expected to serve a population that has been historically marginalized and/or underserved, in part because of geographic barriers, and will help to inform future REHQR program enhancements and changes.

Table 3.14.1. MUC2023-156 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-156	Description
Measure name	Screening for Social Drivers of Health (SDOH)
MUC ID	MUC2023-156
Cascade priority	Equity
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Yale/CORE
Program submitted to	Ambulatory Surgical Center Quality Reporting Program; Hospital Outpatient Quality Reporting Program; Rural Emergency Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	Screening for Social Drivers of Health - (Hospital Inpatient Quality Reporting Program) (Hospital Inpatient Quality Reporting Program) (Merit-based Incentive Payment System-Cost)
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	HIQR 2021, Conditionally Support, pending CBE endorsement. MIPS 2021, Conditionally Support, pending CBE endorsement and successful testing of the measure's reliability and validity. ESRD QIP 2022, Conditionally Support, pending CBE endorsement, successful testing of the measure's reliability and validity, additional details on how potential tools map to the individual drivers (as well as best practices), what resources may be available to assist patients, and alignment with data standards, particularly the GRAVITY project. IPFQR 2022, Conditionally Support, pending CBE endorsement, successful testing of the measure's reliability and validity, additional details on how potential tools map to the individual drivers (as well as best practices), what resources may be available to assist patients, and alignment with data standards, particularly the GRAVITY project. PCHQR 2022, Conditionally Support, pending CBE endorsement, successful testing of the measure's reliability and validity, additional details on how potential tools map to the individual drivers (as well as best practices), what resources may be available to assist patients, and alignment with data standards, particularly the GRAVITY project.
Is the measure currently used in a CMS program	Hospital Inpatient Quality Reporting
If previously used, please describe the history of the measure in CMS program	Accountable Health Communities Pilot (2017-2022). Hospital Inpatient Quality Reporting (January 2023-current). Measure currently used in a CMS program being submitted as-is for a new or different program.

CMS MERIT Submission Information MUC2023-156	Description
Any other program the measure is in use	Hospital Inpatient Quality Reporting Program; Merit-based Incentive Payment System-Cost
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
Measure specification details	
Measure description	The Screening for SDOH is a process measure that assesses the total number of patients, who were 18 years or older on the date of service, screened for social risk factors (specifically, food insecurity, housing instability, transportation needs, utility difficulties, and interpersonal safety) during their outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH) care.
Data source	Administrative Data (non-claims); Electronic Clinical Data (non-EHR); Standardized Patient Assessments; Accountable Health Communities (AHC) Health-Related Social Needs (HRSN) Screening Tool. Due to variability across facility settings and the populations facilities serve, we are proposing to allow facilities flexibility with selection of tools to screen patients. Refer to Patient-Reported Data sections for more details on the type of data sources & Patient-Reported Data and Surveys.
Level of analysis	Facility
Numerator	Number of patients admitted to an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), who are 18 years or older on the date of service and are screened for all of the following five health-related social needs (HRSNs): food insecurity, housing instability, transportation needs, utility difficulties, and interpersonal safety during their outpatient, ambulatory surgical, or rural emergency hospital care.
Denominator	Number of patients who are admitted to an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), and who are 18 years or older.
Numerator exclusions	N/A
Denominator exclusions	The following patients would be excluded from the denominator: (1) Patients who opt-out of screening; and (2) patients who are themselves unable to complete the screening and have no legal guardian or caregiver able to do so on the patient's behalf, during their outpatient, ambulatory surgical, or rural emergency hospital care.
Denominator exceptions	N/A
Risk adjustment	N/A
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	Process

CMS MERIT Submission Information MUC2023-156	Description
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.14.2. MUC2023-156 Screening for Social Drivers of Health (SDOH)* Measure Evaluation

MUC2023-156 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	SDOH is identified by CMS as measurement priority, and CMS, ASPE, NQF, and NCQA have identified measurement of SDOH as a critical gap.[98, 99, 100] 80% of health outcomes are driven by socioeconomic factors, health behaviors, and the physical environment.[101] Systematic screening for SDOH and referrals in response to screening results in greater use of community services, greater odds of receiving fuel assistance, and lower odds of being in a homeless shelter.[102] Patients completing a survey in a large, multi-site study reported their agreement that social needs impact health and that their health system should both ask about and help address social needs.[103] Providers who ask their patients about SDOH are more likely to report that they helped their patients.[104] As an example, specific to two of the Screening for SDOH measure domains, referrals of patients experiencing housing instability and homelessness	Screening without a referral to a community-based resource may be ineffective.[106]	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.

[98] Centers for Medicare & Medicaid Services. (2022). Meaningful Measures 2.0: Moving from Measure Reduction to Modernization. CMS.gov.https://www.cms.gov/medicare/meaningful-measures-framework/meaningful-measures-20-moving-measure-reduction-modernization
[99] National Quality Forum. (2019). National Quality Forum Leads National Call to Address Social Determinants of Health through Quality and Payment Innovation. www.qualityforum.org.https://www.qualityforum.org/News_And_Resources/Press_Releases/2019/National_Quality_Forum_Leads_National_Call_to_Address_Social_Determinants_of_Health__through_Quality_and_Payment_Innovation.aspx
[100] Spaulding, B. (2020). NCQA Releases Its Social Determinants of Health Resource Guide. www.ncqa.orghttps://www.ncqa.org/blog/ncqa-releases-its-social-determinants-of-health-resource-guide/
[101] Baker, M. C., Alberti, P. M., Tsao, T. Y., Fluegge, K., Howland, R. E., & Haberman, M. (2021). Social Determinants Matter For Hospital Readmission Policy: Insights From New York City: Study examines social determinants and hospital readmissions. Health Affairs, 40(4), 645-654.
[102] Garg A, Toy S, Tripodis Y, Silverstein M, Freeman E. Addressing social determinants of health at well child care visits: a cluster RCT. *Pediatrics*. 2015;135(2):e296-e304. doi:10.1542/peds.2014-2888.
[103] Rogers AJ, Hamity C, Sharp AL, Jackson AH, Schickedanz AB. Patients' Attitudes and Perceptions Regarding Social Needs Screening and Navigation: Multi-site Survey in a Large Integrated Health System. *J Gen Intern Med*. 2020;35(5):1389-1395. doi:10.1007/s11606-019-05588-1.
[104] Naz A, Rosenberg E, Andersson N, Labonté R, Andermann A; CLEAR Collaboration. Health workers who ask about social determinants of health are more likely to report helping patients: Mixed-methods study. *Can Fam Physician*. 2016 Nov;62(11):e684-e693.
[106] Garg A, Boynton-Jarrett R, Dworkin PH. Avoiding the Unintended Consequences of Screening for Social Determinants of Health. *JAMA*. 2016;316(8):813–814. doi:10.1001/jama.2016.9282

MUC2023-156 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	to housing resources are associated with reduced health care utilization and costs.[105]		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The Health-Related Social Needs (HRSN) screening tool was psychometrically evaluated at both the item/domain (F/H/T) and tool level for use in Accountable Health Communities (AHC) demonstration model (CMMI), and has demonstrated evidence of both reliability and validity, including predictive and concurrent validity; this includes comparison with other screening tools (e.g., Your Current Life Situation and We Care instruments). The inter-rater reliability (IRR) was calculated to compare agreement of the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) data elements measuring food insecurity (worry and pay), housing insecurity, housing quality, transportation, and utilities, producing high adjusted kappa statistics (> 0.6 for all domains but housing quality) as well as adequate sensitivity and specificity (up to 97% sensitivity). A reported social risk on the AHC and Your Current Life Situations (YCLS) measures was strongly associated with having fair or poor self-rated health.[107] Empiric validity of the domains measured by the AHC tool was evaluated in the following ways:	Patients who are unable to complete the screening and do not have a guardian to complete it for them are excluded (such patients may be disproportionately vulnerable). Developers propose to allow flexibility with selection of screening tools, including data sources such as administrative claims data, electronic clinical data, standardized patient assessments, or patient-reported data and surveys.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[105] Sadowski LS, Kee RA, VanderWeele TJ, Buchanan D. Effect of a Housing and Case Management Program on Emergency Department Visits and Hospitalizations Among Chronically Ill Homeless Adults: A Randomized Trial. *JAMA*. 2009;301(17):1771–1778. doi:10.1001/jama.2009.561

[107] Lewis, C. C., et al. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. Journal of family medicine and primary care, 9(9), 5026-5034. https://doi.org/10.4103/jfmpc.jfmpc_650_20 Available at: https://pubmed.ncbi.nlm.nih.gov/33209839/

MUC2023-156 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	1) A reported social risk on the AHC was strongly associated with having fair or poor self-rated health.[108] 2) A two-item food insecurity screen consisted of questions that were most frequently endorsed by food-insecure families (92.5% endorsed for the first, 81.9% endorsed for the second, sample size n=30,098). An affirmative response to either of these questions was associated with increased risk of poor/fair child health, lifetime hospitalizations, and developmental risk.[109]		
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Developers argue that many facilities already have an SDOH screening tool integrated into their EHRs.	Provider workflow must be modified to implement the measure. Providers must identify a screening tool to implement that complies with the measure requirements (i.e., it addresses all five elements).	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Measures that reflect social and economic drivers are a key CMS priority and measurement gap to be addressed through Meaningful Measures 2.0. In screening 1 million patients, 33% were found to have at least one HRSN factor. Evidence for gap by sociodemographic groups - Black individuals are more likely to experience food insecurity than Whites; Asians, Black, and Latino	Performance scores not reported. Evidence of differential distribution of social risk factors addresses only two out of five HRSN factors (food insecurity, rent).	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

[108] Lewis CC, Wellman R, Jones SMW, et al. Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *J Family Med Prim Care. 2020;9(9):5026-5034. Published 2020 Sep 30. doi:10.4103/jfmpc.jfmpc_650_20*
[109] Hager ER, Quigg AM, Black MM, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics. 2010;126(1):e26-e32. doi:10.1542/peds.2009-3146*

MUC2023-156 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	renters are less likely to be caught up on rent than Whites.[110, 111] 2441 out of 3162 persons responding to the question agreed that the information is important to know and that it can improve care for similar patients.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Refer to Conformance for data element reliability testing.	Entity-level reliability not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Food insecurity: The American Academy of Pediatrics (AAP) recommended in a 2015 statement (reaffirmed in 2021) that pediatricians use a screening tool to assess food insecurity in their patient families.[112] Housing insecurity: The AAP endorsed screening for three forms of housing instability: being behind on rent, moving multiple times, and homelessness.[113] USPSTF guideline (2018) recommends screening for intimate partner violence (IPV) in women of reproductive age and providing or referring women who screen positive to ongoing support services (Grade B, Moderate).[114]	USPSTF guideline cites only one of the five HRSN factors (IPV) included in the SDOH screening tool. Empirical test of accountable entity validity not reported.	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[110] Feeding America 2021. https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf
[111] CBPP. Poverty and Inequity: Tracking the COVID-19 Recessions Effect on Food, Housing and Employment Hardships. https://www.cbpp.org/research/poverty-and-inequality/tracking-the-covid-19-recessions-effects-on-food-housing-and
[112] COUNCIL ON COMMUNITY PEDIATRICS, COMMITTEE ON NUTRITION, Benjamin A. Gitterman, Lance A. Chilton, William H. Cotton, James H. Duffee, Patricia Flanagan, Virginia A. Keane, Scott D. Krugman, Alice A. Kuo, Julie M. Linton, Carla D. McKelvey, Gonzalo J. Paz-Soldan, Stephen R. Daniels, Steven A. Abrams, Mark R. Corkins, Sarah D. de Ferranti, Neville H. Golden, Sheela N. Magge, Sarah Jane Schwarzenberg; Promoting Food Security for All Children. *Pediatrics* November 2015; 136 (5): e1431–e1438. 10.1542/peds.2015-3301
[113] Megan Sandel, Richard Sheward, Stephanie Ettinger de Cuba, Sharon M. Coleman, Deborah A. Frank, Mariana Chilton, Maureen Black, Timothy Heeren, Justin Pasquariello, Patrick Casey, Eduardo Ochoa, Diana Cutts; Unstable Housing and Caregiver and Child Health in Renter Families. *Pediatrics* February 2018; 141 (2): e20172199. 10.1542/peds.2017-2199
[114] US Preventive Services Task Force. (2018). Screening for Intimate Partner Violence, Elder Abuse, and Abuse of Vulnerable Adults: US Preventive Services Task Force Final Recommendation Statement. JAMA. 320(16):1678-1687.https://jamanetwork.com/journals/jama/fullarticle/2708121

MUC2023-156 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Refer to Conformance for domain validity testing.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted.	Screening instrument used will be variable across accountable entities.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Providers could potentially report data to CMS through a secure quality reporting system; such a system is in use for the AHC model. Measure currently in use in Hospital Inpatient Quality Reporting Program (HIQR) and Merit-based Incentive Program (MIPS).	A potential unintended consequence of the measure is that health systems and facilities will not be equipped to act on it due, in part, to the lack of community resources. This challenge was noted as a primary barrier to connecting beneficiaries to resources in the AHC Year 1 evaluation.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-156 Measure Reliability

Reliability was not analyzed for this measure according to the report provided. The overall mean performance score is provided, 33, but the percentiles and overall standard deviation of the performance score are not provided. Without these details, the performance score and reliability cannot be simulated or assessed for this measure.

3.15 MUC2023-171 Screen Positive Rate for Social Drivers of Health (SDOH)*

Description: The Screen Positive Rate for SDOH is a process measure that provides information on the percent of patients receiving care at an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), who were 18 years or older on the date of service, who were screened for all five health-related social needs (HRSNs), and who screened positive for one or more of the following five HRSNs: food insecurity, housing instability, transportation problems, utility difficulties, or interpersonal safety.

Measure Type: Process

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Electronic Clinical Data (non-EHR); Standardized Patient Assessments; Patient Reported Data and Surveys

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Screen Positive for Social Drivers of Health (SDOH) measure to the Ambulatory Surgical Center Quality Reporting Program, Hospital Outpatient Quality Reporting Program, and the Rural Emergency Hospital Quality Reporting Program measure set in support of an agency-wide strategic vision to achieve equity across the health care system. This measure was finalized for adoption into the:

- Hospital IQR program from fiscal year (FY) 2023 Inpatient Prospective Payment System (IPPS) and Long-term Care Hospital (LTCH) Prospective Payment System rule for the calendar year (CY) 2024 reporting period.
- PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program from FY 2024 IPPS and LTCH Prospective Payment System rule with voluntary reporting for the FY 2026 program year.
- Inpatient Psychiatric Facilities (IPFQR) from FY 2024 IPF Prospective Payment System rule with voluntary reporting of CY 2024 data.
- End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP) from CY 2024 ESRD PPS Final Rule for reporting beginning with PY 2026.

This measure is specifically important to include across these programs to capture the magnitude of patients' drivers of health, including key health-related social needs, which may impact surgical/outpatient care experience and recovery, and/or navigation of services across these settings. The REHQR program is expected to serve a population that has been historically marginalized and/or underserved, in part because of geographic barriers, which may impact their outcomes and experience of care. This information will further a facility's understanding of populations served and, in turn, provide an opportunity to connect patients more effectively with specialized care and/or resources.

Table 3.15.1. MUC2023-171 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-171	Description
Measure name	Screen Positive Rate for Social Drivers of Health (SDOH)
MUC ID	MUC2023-171
Cascade priority	Equity
Measure steward	Centers for Medicare & Medicaid Services
Measure Developer	Yale/CORE
Program submitted to	Ambulatory Surgical Center Quality Reporting Program; Hospital Outpatient Quality Reporting Program; Rural Emergency Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	Screen Positive Rate for Social Drivers of Health, Hospital Inpatient Quality Reporting Program
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted to the 2021 MUC list as MUC2021-134 to the Hospital IQR Program and MIPS. It was reviewed by the Rural Health Advisory Group, Health Equity Advisory Group, Clinician Committee, Hospital Committee, Post-Acute Care/Long-Term Care, and the MAP Coordinating Committee, leading to a recommendation of conditional support for MIPS 2021. Conditional support for the Hospital IQR 2021 is based on pending CBE endorsement to address reliability and validity concerns. An additional suggested condition was the results of MUC2021-134 not being used to penalize or criticize healthcare providers under the MIPS or IQR programs. The measure was also submitted as MUC2022-050 to the End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP), Inpatient Psychiatric Facility Quality Reporting Program (IPFQR), PSS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program, leading to a recommendation of conditional support for ESRD QIP, IPFQR, and PCHQR. ESRD QIP 2022, conditionally support, pending CBE endorsement to address reliability and validity concerns, attentiveness to how results are shared and contextualized for public reporting, and encouragement for CMS to examine any differences in reported rates by reporting process (to assess whether they are the same or different across hospitals). IPFQR 2022, Conditionally Support, pending CBE endorsement to address reliability and validity concerns, attentiveness to how results are shared and contextualized for public reporting, and

CMS MERIT Submission Information MUC2023-171	Description
	encouragement for CMS to examine any differences in reported rates by reporting process (to assess whether they are the same or different across hospitals). PCHQRP 2022, pending CBE endorsement to address reliability and validity concerns, attentiveness to how results are shared and contextualized for public reporting, and encouragement for CMS to examine any differences in reported rates by reporting process (to assess whether they are the same or different across hospitals).
Is the measure currently used in a CMS program	Hospital Inpatient Quality Reporting Program
If previously used, please describe the history of the measure in CMS program	Accountable Health Communities Pilot (2017-2022). Hospital Inpatient Quality Reporting (January 2023-current)
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
Measure Specification Details	
Measure Description	The Screen Positive Rate for SDOH is a process measure that provides information on the percent of patients receiving care at an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), who were 18 years or older on the date of service, who were screened for all five health-related social needs (HRSNs), and who screened positive for one or more of the following five HRSNs: food insecurity, housing instability, transportation problems, utility difficulties, or interpersonal safety.
Data source	Administrative Data (non-claims); Electronic Clinical Data (non-EHR); Standardized Patient Assessments; Patient Reported Data and Surveys: Surveys: Accountable Health Communities (AHC) Health-Related Social Needs (HRSN) Screening Tool. Due to variability across facility settings and the populations facilities serve, we are proposing to allow facilities flexibility with selection of tools to screen patients. Refer to Patient Reported Data sections for more details on the type of data sources.
Level of analysis	Facility
Numerator	The numerator consists of the number of patients receiving care at an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), who are 18 years or older on the date of service, who were screened for all five HRSNs, and who screen positive for having a need in one

CMS MERIT Submission Information MUC2023-171	Description
	or more of the following five HRSNs (calculated separately): food insecurity, housing instability, transportation needs, utility difficulties or interpersonal safety.
Denominator	The denominator consists of the number of patients receiving care at an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH), who are 18 years or older on the date of service and are screened for all five HRSNs (food insecurity, housing instability, transportation needs, utility difficulties and interpersonal safety) during their care.
Numerator exclusions	N/A
Denominator exclusions	The following patients would be excluded from the denominator: (1) Patients who opt-out of screening; and (2) patients who are themselves unable to complete the screening and have no legal guardian or caregiver able to do so on the patient's behalf, during their care at an outpatient facility, Ambulatory Surgical Center (ASC), and rural emergency hospital (REH).
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	Process
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.15.2. MUC2023-171 Screen Positive Rate for Social Drivers of Health (SDOH)* Measure Evaluation

MUC2023-171 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	SDOH is identified by CMS as measurement priority, and CMS, ASPE, NQF, and NCQA have identified measurement of SDOH as a critical gap.[115, 116, 117, 118] 80% of health outcomes are driven by socioeconomic factors, health behaviors, and the physical environment.[119] Systematic screening for SDOH and referrals in response to screening results in greater use of community services, greater odds of receiving fuel assistance, and lower odds of being in a homeless shelter.[120] Patients completing a survey in a large, multi-site study reported their agreement that social needs impact health and that their health system should both ask about and help address social needs.[121] Providers who ask their patients about	Screening without a referral to a community-based resource may be ineffective.[124]	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.

[115] Centers for Medicare & Medicaid Services. (2022). Meaningful Measures 2.0: Moving from Measure Reduction to Modernization. CMS.gov.https://www.cms.gov/medicare/meaningful-measures-framework/meaningful-measures-20-moving-measure-reduction-modernization
[116] Office Of The Assistant Secretary For Planning and Evaluation. (2020). Second Report to Congress on Social Risk and Medicare's Value-Based Purchasing Programs. Aspe.hhs.gov.https://aspe.hhs.gov/pdf-report/second-impact-report-to-congress
[117] National Quality Forum. (2019). National Quality Forum Leads National Call to Address Social Determinants of Health through Quality and Payment Innovation. www.qualityforum.org.https://www.qualityforum.org/News_And_Resources/Press_Releases/2019/National_Quality_Forum_Leads_National_Call_to_Address_Social_Determinants_of_Health__through_Quality_and_Payment_Innovation.aspx
[118] Spaulding, B. (2020). NCQA Releases Its Social Determinants of Health Resource Guide. www.ncqa.orghttps://www.ncqa.org/blog/ncqa-releases-its-social-determinants-of-health-resource-guide/
[119] Baker, M. C., Alberti, P. M., Tsao, T. Y., Fluegge, K., Howland, R. E., & Haberman, M. (2021). Social Determinants Matter For Hospital Readmission Policy: Insights From New York City: Study examines social determinants and hospital readmissions. Health Affairs, 40(4), 645-654.
[120] Garg A, Toy S, Tripodis Y, Silverstein M, Freeman E. Addressing social determinants of health at well child care visits: a cluster RCT. *Pediatrics*. 2015;135(2):e296-e304. doi:10.1542/peds.2014-2888.
[121] Rogers AJ, Hamity C, Sharp AL, Jackson AH, Schickedanz AB. Patients' Attitudes and Perceptions Regarding Social Needs Screening and Navigation: Multi-site Survey in a Large Integrated Health System. *J Gen Intern Med*. 2020;35(5):1389-1395. doi:10.1007/s11606-019-05588-1.
[124] Garg A, Boynton-Jarrett R, Dworkin PH. Avoiding the Unintended Consequences of Screening for Social Determinants of Health. *JAMA*. 2016;316(8):813–814. doi:10.1001/jama.2016.9282

MUC2023-171 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	SDOH are more likely to report that they helped their patients.[122] As an example specific to two of the Screening for SDOH measure domains, referrals of patients experiencing housing instability and homelessness to housing resources is associated with reduced health care utilization and costs.[123]		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The Health-Related Social Needs (HRSN) screening tool was psychometrically evaluated at both the item/domain (F/H/T) and tool level for use in Accountable Health Communities (AHC) demonstration model (CMMI), and has demonstrated evidence of both reliability and validity, including predictive and concurrent validity; this includes comparison with other screening tools (e.g., Your Current Life Situation and We Care instruments). The inter-rater reliability (IRR) was calculated to compare agreement of the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) data elements measuring food insecurity (worry and pay), housing insecurity, housing quality, transportation, and utilities. producing high adjusted kappa statistics (>0.6 for all domains but housing quality) as well as adequate sensitivity and specificity (up to 97% sensitivity). A reported social risk on the AHC and Your Current Life Situations (YCLS) measures was strongly	Patients who are unable to complete the screening and do not have a guardian to complete it for them are excluded (such patients may be disproportionately vulnerable). Developers propose to allow flexibility with selection of screening tools, including data sources such as administrative claims data, electronic clinical data, standardized patient assessments, or patient-reported data and surveys.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[122] Naz A, Rosenberg E, Andersson N, Labonté R, Andermann A; CLEAR Collaboration. Health workers who ask about social determinants of health are more likely to report helping patients: Mixed-methods study. *Can Fam Physician*. 2016 Nov;62(11):e684-e693.
[123] Sadowski LS, Kee RA, VanderWeele TJ, Buchanan D. Effect of a Housing and Case Management Program on Emergency Department Visits and Hospitalizations Among Chronically Ill Homeless Adults: A Randomized Trial. *JAMA*. 2009;301(17):1771–1778. doi:10.1001/jama.2009.561

MUC2023-171 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	associated with having fair or poor self-rated health.[125] Empiric validity of the domains measured by the AHC tool was evaluated in the following ways: 1) A reported social risk on the AHC was strongly associated with having fair or poor self-rated health.[126] 2) A two-item food insecurity screen consisted of questions that were most frequently endorsed by food-insecure families (92.5% endorsed for the first, 81.9% endorsed for the second, sample size n=30,098). An affirmative response to either of these questions was associated with increased risk of poor/fair child health, lifetime hospitalizations, and developmental risk.[127]		
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Developers argue that many facilities already have an SDOH screening tool integrated into their EHRs.	Provider workflow must be modified to implement the measure. Providers must identify a screening tool to implement that complies with the measure requirements (i.e., it addresses all five elements).	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes?	Measures that reflect social and economic drivers are a key CMS priority and measurement gap to be addressed through Meaningful Measures 2.0.	Performance scores not reported. Evidence of differential distribution of social risk factors addresses only two out of five HRSN factors (food insecurity, rent).	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

[125] Lewis, C. C., et al. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. Journal of family medicine and primary care, 9(9), 5026-5034. https://doi.org/10.4103/jfmpc.jfmpc_650_20 Available at: https://pubmed.ncbi.nlm.nih.gov/33209839/
[126] Lewis CC, Wellman R, Jones SMW, et al. Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *J Family Med Prim Care. 2020;9(9):5026-5034. Published 2020 Sep 30. doi:10.4103/jfmpc.jfmpc_650_20*
[127]Hager ER, Quigg AM, Black MM, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics. 2010;126(1):e26-e32. doi:10.1542/peds.2009-3146*

MUC2023-171 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(*Context of Use*)	In screening 1 million patients, 33% were found to have at least one HRSN factor. Evidence for gap by sociodemographic groups - Black individuals are more likely to experience food insecurity than Whites; Asians, Black, and Latino renters are less likely to be caught up on rent than Whites.[128, 129] 2,441 out of 3,162 persons responding to the question agreed that the information is important to know and that it can improve care for similar patients.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Refer to Conformance for data element reliability testing.	Entity-level reliability not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Food insecurity: The American Academy of Pediatrics (AAP) recommended in a 2015 statement (reaffirmed in 2021) that pediatricians use a screening tool to assess food insecurity in their patient families.[130] Housing insecurity: The AAP endorsed screening for three forms of housing instability: being behind on rent, moving multiple times, and homelessness.[131]	USPSTF guideline cites only one of the five HRSN factors (IPV) included in the SDOH screening tool. Empirical test of accountable entity validity not reported.	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[128] https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf
[129] https://www.cbpp.org/research/poverty-and-inequality/tracking-the-covid-19-recessions-effects-on-food-housing-and
[130] COUNCIL ON COMMUNITY PEDIATRICS, COMMITTEE ON NUTRITION, Benjamin A. Gitterman, Lance A. Chilton, William H. Cotton, James H. Duffee, Patricia Flanagan, Virginia A. Keane, Scott D. Krugman, Alice A. Kuo, Julie M. Linton, Carla D. McKelvey, Gonzalo J. Paz-Soldan, Stephen R. Daniels, Steven A. Abrams, Mark R. Corkins, Sarah D. de Ferranti, Neville H. Golden, Sheela N. Magge, Sarah Jane Schwarzenberg; Promoting Food Security for All Children. *Pediatrics* November 2015; 136 (5): e1431–e1438. 10.1542/peds.2015-3301
[131] Megan Sandel, Richard Sheward, Stephanie Ettinger de Cuba, Sharon M. Coleman, Deborah A. Frank, Mariana Chilton, Maureen Black, Timothy Heeren, Justin Pasquariello, Patrick Casey, Eduardo Ochoa, Diana Cutts; Unstable Housing and Caregiver and Child Health in Renter Families. *Pediatrics* February 2018; 141 (2): e20172199. 10.1542/peds.2017-2199

MUC2023-171 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	USPSTF guideline (2018) recommends screening for intimate partner violence (IPV) in women of reproductive age and providing or referring women who screen positive to ongoing support services (Grade B, Moderate).[132] Refer to Conformance for domain validity testing.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted.	Screening instrument used will be variable across accountable entities.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Providers could potentially report data to CMS through a secure quality reporting system; such a system is in use for the AHC model. Measure currently in use in Hospital Inpatient Quality Reporting Program (HIQR).	A potential unintended consequence of the measure is that health systems and facilities will not be equipped to act on it due, in part, to the lack of community resources. This challenge was noted as a primary barrier to connecting beneficiaries to resources in the AHC Year 1 evaluation.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-171 Measure Reliability

Reliability was not analyzed for this measure according to the report provided. The overall mean performance score is provided, 33, but the percentiles and overall standard deviation of the performance score are not provided. Without these details, the performance score and reliability cannot be simulated or assessed for this measure.

[132] US Preventive Services Task Force. (2018). Screening for Intimate Partner Violence, Elder Abuse, and Abuse of Vulnerable Adults: US Preventive Services Task Force Final Recommendation Statement. JAMA. 320(16):1678-1687.https://jamanetwork.com/journals/jama/fullarticle/2708121

3.16 MUC2023-172 Patient Understanding of Key Information Related to Recovery After a Facility-Based Outpatient Procedure or Surgery, Patient-Reported Outcome-Based Performance Measure (Information Transfer PRO-PM)

Description: The Information Transfer PRO-PM collects information from patients aged 18 years or older who had a surgery or procedure at a hospital outpatient department (HOPD). The measure reports the average score patients rated the hospitals' ability to communicate clear, personalized, discharge instructions using a 9-item survey.

Measure Type: PRO-PM or Patient Experience of Care

Level of Analysis: Facility

Data Source(s): Patient Reported Data and Surveys: Info Transfer PRO-PM_9-item survey.

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Patient Understanding of Key Information Related to Recovery After a Facility-Based Outpatient Procedure or Surgery, Patient Reported Outcome-Based Performance Measure (Information Transfer PRO-PM) to the Hospital Outpatient Quality Reporting (HOQR) Program measure set. The goal of this measure is to improve the quality of communication that facilities provide to improve patients' understanding of clinical information related to the recovery for an outpatient procedure or surgery. The measure directly addresses the gap in care identified in the literature that many patients do not have a full understanding of discharge instructions.

This patient-centered care/patient experience measure was developed with extensive input from patients who indicated support for a PRO-PM about effective transfer or information about recovery from an outpatient procedure or surgery. The 9-item survey measure was finalized to fill gaps in measurement that are not covered by the OAS CAHPS Survey.

Table 3.16.1. MUC2023-172 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-172	Description
Measure name	Patient Understanding of Key Information Related to Recovery After a Facility-Based Outpatient Procedure or Surgery, Patient Reported Outcome-Based Performance Measure (Information Transfer PRO-PM)
MUC ID	MUC2023-172
Cascade priority	Person-Centered Care

CMS MERIT Submission Information MUC2023-172	Description
Measure Steward	Centers for Medicare and Medicaid Services
Measure Developer	Yale/CORE
Program submitted to	Hospital Outpatient Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	Consumer Assessment of Healthcare Providers and Systems Outpatient and Ambulatory Surgery Survey (OAS CAHPS)
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	N/A
If previously used, please describe the history of the measure in CMS program	New measure never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Submitted for Fall 2023 measure cycle
CBE endorsement number if applicable	4210
History of endorsement	N/A
Path to endorsement	Currently in Fall 2023 Measure cycle
Measure Specification Details	
Measure Description	The Information Transfer PRO-PM collects information from patients aged 18 years or older who had a surgery or procedure at a hospital outpatient department (HOPD). The measure reports the average score patients rated the hospitals' ability to communicate clear, personalized, discharge instructions using a 9-item survey. Patients are asked to answer a brief electronic survey, comprised of three domains: applicability; medications; and daily activities. The survey was designed for patients to receive the survey within two to seven days post-procedure. Surveys with fewer than five questions answered are considered incomplete and are removed from facility score calculation. Individual scores are calculated using a top-box approach, which accounts for the percentage of the total number of items respondents selected the most favorable responses out of the total number of items respondents deemed applicable to their surgery/procedure.
Data source	Patient-Reported Data and Surveys: Info Transfer PRO-PM_9-item survey
Level of analysis	Facility
Numerator	The numerator is the sum of all individual scores a HOPD receives from eligible respondents. An individual score is calculated for each respondent, by taking the sum of items given the most positive response ("Yes" or "Very Clear") divided by the total number of items respondents deemed applicable to their procedure/surgery calculated by subtracting the sum of items deemed "Does not apply" from the total number of items (n= 9).

CMS MERIT Submission Information MUC2023-172	Description
Denominator	The denominator is the total number of eligible respondents for a given HOPD (i.e., the total number of persons aged 18 years or older, who had a surgery or procedure and who were discharged alive from that HOPD within less than two midnights and responded to the survey).
Numerator exclusions	N/A
Denominator exclusions	The measure excludes patients less than 18 years of age and patients with length of stay in a HOPD two or more midnights.
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	PRO-PM or Patient Experience of Care
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.16.2. MUC2023-172 Information Transfer PRO-PM Measure Evaluation

MUC2023-172 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities?	A lack of consistently written documentation in the outpatient setting[133] is associated with worse	None of the evidence cited on the relationship between delivery of discharge	While the study population differs from the target quality program population, the importance for

[133] Downey E, Olds DM. Comparison of Documentation on Inpatient Discharge and Ambulatory End-of-Visit Summaries. J Healthc Qual. 2021;43(3):e43-e52.

MUC2023-172 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(*Concept of Interest)*	patient understanding[134] and lower patient activation during their recovery.[135] As a result, information that is simpler to read and more complete has been associated with fewer follow-up calls to providers as well as less frequent hospital readmissions.[136,137,138] Improvements in communication of information vital for recovery after an outpatient procedure is needed.	instructions and outcomes addresses the ambulatory surgical setting.	the selected program population can be extrapolated.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	Nine survey items were tested for internal consistency: Cronbach's alpha = 0.84. The final survey was reduced to 9 items addressing three domains (applicability; medications; daily activities), from an original 21 items. No denominator exclusions. It is intended that patients receive the survey within two to seven days post-procedure to minimize the risk of poor recall. An empirically validated patient-administered survey identified similar domains to the survey used in the measure, including 5 key domains for patients learning needs following an acute hospitalization 1) medication administration, 2) activities of daily living, 3) community and follow up, 4) attitude toward illness, and 5) treatment and	Data elements for this instrument were not empirically evaluated for validity; empirical studies cited are limited to inpatient setting.	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[134] Hoek AE, Anker SCP, van Beeck EF, Burdorf A, Rood PPM, Haagsma JA. Patient Discharge Instructions in the Emergency Department and Their Effects on Comprehension and Recall of Discharge Instructions: A Systematic Review and Meta-analysis. Ann Emerg Med. 2020;75(3):435-444
[135] Kang E, Gillespie BM, Tobiano G, Chaboyer W. Discharge education delivered to general surgical patients in their management of recovery post discharge: A systematic mixed studies review. Int J Nurs Stud. 2018;87:1-13.
[136] Choudhry AJ, Younis M, Ray-Zack MD, et al. Enhanced readability of discharge summaries decreases provider telephone calls and patient readmissions in the posthospital setting. Surgery. 2019;165(4):789-794.
[137] Mitchell JP. Association of provider communication and discharge instructions on lower readmissions. J Healthc Qual. 2015;37(1):33-40.
[138] VanSuch M, Naessens JM, Stroebel RJ, Huddleston JM, Williams AR. Effect of discharge instructions on readmission of hospitalised patients with heart failure: do all of the Joint Commission on Accreditation of Healthcare Organizations heart failure core measures reflect better care? Qual Saf Health Care. 2006;15(6):414-417.

MUC2023-172 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	complication.[139] The majority of articles reviewed support the idea that a patient administered survey could be used to assess patient understanding of discharge instructions related to medical administration, activities, complications, etc.		
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Provider workflow was analyzed; workflow does not require modification. Planned data collection includes an online survey. Survey tool is non-proprietary.	No data elements are in defined fields in electronic sources.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Performance scores reported for 15 sites (hospital outpatient surgery departments): overall mean 81.1%; minimum 74.6; 10th 76.6; median 81.1; 90th 86.3; maximum 87.3; SD 3.7. Evidence exists of statistically significant gaps in performance among subpopulations defined by one or more social risk factors (details not provided in submission). 4 of 4 patients who responded to the question agreed the information provided by the measure is important to know and could improve care for similar patients. Estimated impact on 1,100,000 patients annually.	Benefit vs burden were not empirically evaluated.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

[139] Bubela N, Galloway S, McCay E, McKibbon A, Nagle L, Pringle D, Ross E, Shamian J. The Patient Learning Needs Scale: reliability and validity. J Adv Nurs. 1990 Oct;15(10):1181-7. doi: 10.1111/j.1365-2648.1990.tb01711.x. PMID: 2258526.

MUC2023-172 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	The number of outpatient surgeries and procedures have been steadily rising since 2009.[140,141,142] As the scale and complexity of outpatient surgical procedures increase, so does the concern that the patient sent home after undergoing general anesthetic may not have full understanding of the information they received. A study comparing inpatient and outpatient surgery procedures found that inpatient providers were better at communicating discharge instructions to patients more regularly.[143]		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Approximately 85-90% of facilities may have reliability at or above 0.60 based on the sample of 15 sites. The developer reported median reliability of 0.7.	Approximately 10-15% of facilities may have a reliability below 0.60 based on the sample of 15 sites.	Most or all entities have reliability above the threshold (0.60) within the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric validity: Pearson's correlation between measure score and Outpatient and Ambulatory Surgery (OAS) CAHPS linear mean score for "communication about your procedure" (n=9 sites): 0.64 (as expected). Face validity: 8 of 10 technical experts agreed the unadjusted measure could distinguish between facilities providing good vs poor care. 14 empirical studies and 3 systematic reviews were evaluated.	No guidelines cited. Face validity: 2 of 10 experts disagreed that measure could distinguish good from poor facility performance. None of the 14 studies or 3 systematic reviews cited addressed the ambulatory surgical setting.	There is an association between the entity and the measure focus within the quality program population. There is clear articulation of the way an entity may improve performance on the measure focus *within* the quality program population.

[140] DelSole EM, Makanji HS, Kurd MF. (2019). Current trends in ambulatory spine surgery: a systematic review. J Spine Surg. 5(Suppl 2):S124-S132. Doi:10.21037/jss.2019.04.12
[141] Kondamuri NS, Miller AL, Rathi VK, et al. (2020). Trends in Ambulatory Surgery Center Utilization for Otolaryngologic Procedures among Medicare Beneficiaries, 2010-2017. Otolaryngol Head Neck Surg. 162(6):873-880. Doi:10.1177/0194599820914298
[142] Shariq OA, Bews KA, Etzioni DA, Kendrick ML, Habermann EB, Thiels CA. (2023). Performance of General Surgical Procedures in Outpatient Settings Before and After Onset of the COVID-19 Pandemic. JAMA Netw Open. 6(3):e231198. Doi:10.1001/jamanetworkopen.2023.1198
[143] Downey E, Olds DM. Comparison of Documentation on Inpatient Discharge and Ambulatory End-of-Visit Summaries. J Healthc Qual. 2021;43(3):e43-e52.

MUC2023-172 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Systematic Reviews (only one citation could be identified in submission): This systematic review of patient discharge instructions after an ED visit (n=51 studies) found that patients had an average recall rate of 47% for verbal instructions, 58% for written instructions, and 67% for video instructions, indicating that patients often misunderstand discharge instructions, and should be given instructions in at least two modes.[144]		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Measure is not risk adjusted; developer states RA is not appropriate empirically or conceptually.	Information gathering report submitted by the developer states that patient understanding is mediated by primary language, education, and literacy (not collected by the survey instrument provided), based on limited empirical literature.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	8 out of 10 voting experts agreed that information from the measure is easy to understand and useful for decision-making. While the measure is similar to one item contained in OAS CAHPS, the proposed measure specifically addresses clarity of communication around discharge instructions.	2 of 10 experts disagreed that the information is easy to understand/useful. This measure is currently in the Fall 2023 CBE endorsement cycle.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-172 Measure Reliability

The proportion of applicable items in the survey for which a respondent answered highly positively ("Yes" or "Very Clear") is calculated for each respondent. The performance score is the average of these values across all eligible respondents. (Note: Although the score takes on the values from 0 to 1, it is not binomially distributed.)

[144] Hoek AE, Anker SCP, van Beeck EF, Burdorf A, Rood PPM, Haagsma JA. Patient Discharge Instructions in the Emergency Department and Their Effects on Comprehension and Recall of Discharge Instructions: A Systematic Review and Meta-analysis. Ann Emerg Med. 2020;75(3):435-444

The measure report indicates a median signal-to-noise reliability of 0.7 based on 15 entities.

Estimated decile tables:
Based on the mean, standard deviation and percentile information provided for the performance score and calculated reliability for the 15 entities described in the measure report, deciles by performance score and reliability were estimated and shown in Tables 3.16.3 and 3.16.4. These tables were created to provide reviewers with a more standardized format to assess reliability.

For Table 3.16.3, entities are sorted by performance score, and the estimated average score by decile is shown. Average, standard deviation, and minimum and maximum scores are also included.

Table 3.16.3. MUC2023-172 Performance Score Deciles

MUC2023-172	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score	0.811	0.746	0.762	0.781	0.784	0.787	0.801	0.814	0.830	0.851	0.855	0.873	0.873

Although no population sizes were included in the information provided, a mixed model to estimate reliability likely assumes a constant variance, σ^2. In this case, σ^2_{within} in the reliability calculation $\frac{\sigma^2_{between}}{\sigma^2_{between}+\sigma^2_{within}}$ would be estimated by σ^2/n, and so reliability will increase with population size. Table 3.16.4 shows the estimated reliability deciles, which would be equivalent to the reliability deciles by patient population size. The estimated average reliability by population decile is shown.

Table 3.16.4. MUC2023-172 Reliability (Decile by Denominator-Target Population Size)

MUC2023-172	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Reliability	0.69	0.57	0.57	0.60	0.61	0.64	0.69	0.72	0.75	0.77	0.80	0.82	0.82

Assumptions:

The estimates are based on the performance score and reliability distributions provided in the measure report. It is assumed that σ^2_{within} is estimated by σ^2/n, where σ^2 is constant across all entities.

Interpretation:

The reported median reliability is 0.7. About 10-15% of the entities may have reliability below 0.6.

3.17 MUC2023-175 Facility Commitment to Health Equity

Description: This structural measure assesses facility commitment to health equity using a suite of equity-focused organizational competencies aimed at achieving health equity for racial and ethnic minority groups, people with disabilities, members of the lesbian, gay, bisexual, transgender, queer, intersex, asexual (LGBTQIA) community, individuals with limited English proficiency, rural populations, religious minorities, and people living near or below poverty level.

Measure Type: Structure

Level of Analysis: Facility

Data Source(s): Provider data entry (attestation-based statements); Other

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Facility Commitment to Health Equity measure to the Ambulatory Surgical Center Quality Reporting Program measure set. This measure was finalized for use in the Inpatient Psychiatric Facility (IPF) Quality Reporting Program in the CY 2024 Reporting Period (Data Submitted in CY 2025)/FY 2026 Payment Determination, the PPS-Exempt Cancer Hospital Quality Reporting Program Beginning with the FY 2026 Program Year, and the End-Stage Renal Disease Quality Incentive Program Beginning with the PY 2026. The five questions for this structural measure were adapted from the CMS Office of Minority Health's Building an Organizational Response to Health Disparities framework for helping health care organizations build a response to health disparities through a focus on data collection, data analysis, culture of equity, quality improvement and interventions. CMS is considering adding this in support of an agency-wide strategic vision to achieve equity across the health care system. This measure is specifically important to include in the ASCQR program to ensure leadership of ASCs are committed to equity-focused organizational competencies that enhance awareness, understanding, and implementation of improvements to address inequities in surgical care experience and recovery that may be faced by individuals of different groups and circumstances. By doing so, this creates an institutional culture of equity that promotes optimal health for all patients served in these settings.

Table 3.17.1. MUC2023-175 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-175	Description
Measure name	Facility Commitment to Health Equity
MUC ID	MUC2023-175
Cascade priority	Equity

CMS MERIT Submission Information MUC2023-175	Description
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Yale/CORE
Program submitted to	Ambulatory Surgical Center Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	Hospital Commitment to Health Equity in the Hospital Inpatient Quality Report (HIQR)
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted as MUC2022-027 to the End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP), Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program, and the PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program. The measure was reviewed by the Health Equity Advisory workgroup, Rural Health Advisory workgroup, and the MAP Coordinating Committee leading to conditional support, pending CBE endorsement, committing to look at outcomes in the future, providing more clarity on the measure, supplementing interpretations with results, and verifying attestation provided by the accountable entities.
Is the measure currently used in a CMS program	Hospital Inpatient Quality Reporting (January 2023-Present)
If previously used, please describe the history of the measure in CMS program	Measure currently used in a CMS program being submitted as-is for a new or different program.
Any other program the measure is in use	Hospital Inpatient Quality Reporting
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	N/A
CBE endorsement number if applicable	N/A
History of endorsement	Not Endorsed
Path to endorsement	Unknown
Measure specification details	
Measure description	This structural measure assesses facility commitment to health equity using a suite of equity-focused organizational competencies aimed at achieving health equity for racial and ethnic minority groups, people with disabilities, members of the lesbian, gay, bisexual, transgender, queer, intersex, asexual (LGBTQIA) community, individuals with limited English proficiency, rural populations, religious minorities, and people living near or below poverty level. Facilities will receive one point each for attesting to five different domains of commitment to advancing health equity for a total of five points.
Data source	Provider data entry (attestation-based statements); Other

CMS MERIT Submission Information MUC2023-175	Description
Level of analysis	Facility
Numerator	Facilities participating in the specific Quality Reporting Programs must answer questions during the CMS specified time period. The five domains for facility attestation and key questions for each domain are the following: Domain 1: Equity is a Strategic Priority Facility commitment to reducing healthcare disparities is strengthened when equity is a key organizational priority. Please attest that your facility has a strategic plan for advancing health equity and that it includes all of the following elements. Select all that apply (note: attestation of all elements is required in order to qualify for the measure numerator): A. Our facility strategic plan identifies priority populations who currently experience health disparities. B. Our facility strategic plan identifies healthcare equity goals and discrete action steps to achieving these goals. C. Our facility strategic plan outlines specific resources which have been dedicated to achieving our equity goals. D. Our facility strategic plan describes our approach for engaging key stakeholders, such as community-based organizations. Domain 2: Data Collection Collecting valid and reliable demographic and social determinant of health data on patients served in a facility is an important step in identifying and eliminating health disparities. Please attest that your facility engages in the following activities. Select all that apply (note: attestation of all elements is required in order to qualify for the measure numerator): A. Our facility collects demographic information (such as self-reported race, national origin, primary language, and ethnicity data), and/or social determinant of health information on the majority of our patients. B. Our facility has training for staff in culturally sensitive collection of demographic and/or social determinant of health information. C. Our facility inputs demographic and/or social determinant of health information collected from patients into structured, interoperable data elements using EHR technology. Domain 3: Data Analysis Effective data analysis can provide insights into which factors contribute to health disparities and how to respond. Please attest that your facility engages in the following activities. Select all that apply (note: attestation of all elements is required in order to qualify for the measure numerator): A. Our facility stratifies key performance indicators by demographic and/or social determinants of health variables to identify equity gaps and includes this information on facility performance dashboards.

CMS MERIT Submission Information MUC2023-175	Description
	Domain 4: Quality Improvement Health disparities are evidence that high quality care has not been delivered equitably to all patients. Engagement in quality improvement activities can improve quality of care for all patients. Select all that apply (note: attestation of all elements is required in order to qualify for the measure numerator): A. Our facility participates in local, regional, or national quality improvement activities focused on reducing health disparities. Domain 5: Leadership Engagement Leaders and staff can improve their capacity to address disparities by demonstrating routine and thorough attention to equity and setting an organizational culture of equity. Please attest that your facility engages in the following activities. Select all that apply (note: attestation of all elements is required to qualify for the measure numerator): A. Our facility senior leadership, such as chief executives and the entire facility board of trustees, annually reviews our strategic plan for achieving health equity. B. Our facility senior leadership, such as chief executives and the entire facility board of trustees, annually reviews key performance indicators stratified by demographic and/or social factors.
Denominator	The denominator for each facility is 5, which represents the total number of questions. The measure is calculated as the number of complete attestations / total number of questions. There is no partial credit for any question. Attestation of all elements is required in order to qualify for the measure numerator.
Numerator exclusions	N/A
Denominator exclusions	N/A
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	Facilities serving Medicare Fee for Service beneficiaries
Measure type	Structure
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No

CMS MERIT Submission Information MUC2023-175	Description
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.17.2. MUC2023-175 Facility Commitment to Health Equity Measure Evaluation

MUC2023-175 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Extensive scientific literature demonstrates poorer health outcomes and quality of care for certain groups based on race, ethnicity, sexual orientation, SES, disability status, and rural location. Facility/hospital leaders can drive change in culture to improve equity: The Agency for Healthcare Research and Quality and The Joint Commission identify the important role of hospital leadership in promoting a culture of quality and safety.[145,146] Interventions taken by hospital leadership can positively influence culture.[147] Health care organizational culture can translate into better quality outcomes and experience of care.[148,149,150]	--	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.

[145] Leadership Role in Improving Patient Safety. Agency for Health Care Research and Quality. Patient Safety Primer, September 2019: Available at: https://psnet.ahrq.gov/primer/leadership-role-improving-safety
[146] Joint Commission on Accreditation of Healthcare Organizations, USA. Leadership committed to safety. Sentinel Event Alert. 2009 Aug 27;(43):1-3. PMID: 19757544
[147] Bradley EH, Brewster AL, McNatt Z, et al. How guiding coalitions promote positive culture change in hospitals: a longitudinal mixed methods interventional study. BMJ Qual Saf. 2018;27(3)(3):218-225. doi:10.1136/bmjqs-2017-006574.
[148] Ibid.
[149] Smith SA, Yount N, Sorra J. Exploring relationships between hospital patient safety culture and Consumer Reports safety scores. BMC health services research. 2017;17(1):143. doi:10.1186/s12913-017-2078-6.
[150] Keroack MA, Youngberg BJ, Cerese JL, Krsek C, Prellwitz LW, Trevelyan EW. Organizational factors associated with high performance in quality and safety in academic medical centers. Acad Med. 2007 Dec;82(12):1178-86. doi: 10.1097/ACM.0b013e318159e1ff. PMID: 18046123.

MUC2023-175 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	No denominator exclusions.	--	Most persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	No apparent burden for data collection falls on providers; the survey is completed at the facility level.	There is burden associated with hospitals/facilities making the needed investments to improve performance and develop the needed data to complete the survey.	The people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Equity is a CMS Meaningful Measures 2.0 priority.	Performance scores are not provided. Performance gap by subgroups is not tested. Submission indicates patients/persons were consulted regarding measure importance; however, no details (e.g., numbers responding positively) were provided.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Entity-level reliability testing not performed (N/A for structure measures).	--	N/A
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Most equity domain criteria specify the required structures and processes for improving the measure score.	Empirical test of measure validity not reported. Some equity domain criteria are vaguely defined, e.g., Domain 4, "Our hospital participates in local, regional, or national quality improvement activities focused on reducing health disparities."	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-175 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted.	--	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Most equity domain criteria focus on strategic planning and developing and sharing data that serve as feedback to administration and providers on performance by patient subgroups that are the focus of equity efforts, i.e., "foundational best practices." Measure aligns with 01660-01-C-HIQR measure currently in use.	Measured entities were not consulted regarding usability/value of the measure. A potential unintended consequence is diversion of resources away from other initiatives to make needed investments to improve in this area.	There is an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-175 Measure Reliability

Entity-level reliability testing not performed (N/A for structure measures).

3.18 MUC2023-176 Hospital Commitment to Health Equity*

Description: This structural measure assesses hospital commitment to health equity using a suite of equity-focused organizational competencies aimed at achieving health equity for racial and ethnic minority groups, people with disabilities, members of the lesbian, gay, bisexual, transgender, queer, intersex, asexual (LGBTQIA) community, individuals with limited English proficiency, rural populations, religious minorities, and people living near or below poverty level.

Measure Type: Structure

Level of Analysis: Facility

Data Source(s): Provider data entry (attestation-based statements); Other

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Hospital Commitment to Health Equity measure to the Hospital Outpatient Quality Reporting Program and Rural Emergency Hospital Quality Reporting Program measure set in support of an agency-wide strategic vision to achieve equity across the health care system. This measure was finalized for use in the Hospital IQR Program in the FY 2023 IPPS and LTCH Prospective Payment System rule for the CY 2023 reporting period/FY 2025 payment determination and for subsequent years. The five questions for this structural measure were adapted from the CMS Office of Minority Health's Building an Organizational Response to Health Disparities framework for helping health care organizations build a response to health disparities through a focus on data collection, data analysis, culture of equity, quality improvement and interventions. Ensuring leadership of hospitals are committed to equity-focused organizational competencies enhances awareness and understanding of inequities and disparities often faced by individuals of different groups and circumstances. This measure is specifically important to include in the HOQR and REHQR programs to ensure leadership is committed to equity-focused organizational competencies that enhance awareness, understanding, and implementation of improvements to address inequities in care experience and/or navigation of services. The REHQR program is expected to serve a population that has been historically marginalized and/or underserved, in part because of geographic barriers; thus, this measure is specifically important to ensure leadership of REHs are committed to equity-focused organizational competencies that enhance awareness, understanding, and implementation of improvements to address inequities in outcomes and experience of care faced by individuals of different groups and circumstances. By doing so, this creates an institutional culture of equity that promotes optimal health for all patients served in these settings.

Table 3.18.1. MUC2023-176 Brief Summary of Measure Information

CMS MERIT Submission Info MUC2023-176	Description
Measure name	Hospital Commitment to Health Equity
MUC ID	MUC2023-176
Cascade priority	Equity
Measure steward	Centers for Medicare & Medicaid Services
Measure developer	Yale/CORE
Program submitted to	Hospital Outpatient Quality Reporting Program; Rural Emergency Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted as MUC2021-106 to the 2021 Hospital IQR Program and was reviewed by the 2021 Rural Health Advisory workgroup, Health Equity Advisory workgroup, Clinician workgroup, Hospital workgroup, Post-Acute Care/Long-Term Care workgroup and the MAP Coordinating Committee. The measure was recommended with conditional support pending CBE endorsement, committing to look at outcomes in the future, providing more clarity on the measure and supplementing interpretations with results, and verifying attestation provided by the accountable entities.
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	Measure currently used in a CMS program being submitted as-is for a new or different program.
Any other program the measure is in use	Hospital Inpatient Quality Reporting Program
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
Path to endorsement	Unknown
Measure specification details	
Measure description	This structural measure assesses hospital commitment to health equity using a suite of equity-focused organizational competencies aimed at achieving health equity for racial and ethnic minority groups, people with disabilities, members of the lesbian, gay, bisexual, transgender, queer, intersex, asexual (LGBTQIA) community, individuals with limited English

CMS MERIT Submission Info MUC2023-176	Description
	proficiency, rural populations, religious minorities, and people living near or below poverty level. Hospitals will receive one point each for attesting to five different domains of commitment to advancing health equity for a total of five points.
Data source	Provider data entry (attestation-based statements); Other
Level of analysis	Facility
Numerator	Hospitals participating in the specific Quality Reporting Programs must answer questions during the CMS specified time period. The five domains for hospital attestation and key questions for each domain are the following: Domain 1: Equity is a Strategic Priority Hospital commitment to reducing healthcare disparities is strengthened when equity is a key organizational priority. Please attest that your hospital has a strategic plan for advancing health equity and that it includes all of the following elements. Select all that apply (note: attestation of all elements is required in order to qualify for the measure numerator): A. Our hospital strategic plan identifies priority populations who currently experience health disparities. B. Our hospital strategic plan identifies health equity goals and discrete action steps to achieving these goals. C. Our hospital strategic plan outlines specific resources which have been dedicated to achieving our equity goals. D. Our hospital strategic plan describes our approach for engaging key stakeholders, such as community-based organizations. Domain 2: Data Collection Collecting valid and reliable demographic and social determinant of health data on patients served in a hospital is an important step in identifying and eliminating health disparities. Please attest that your hospital engages in the following activities. Select all that apply (note: attestation of all elements is required to qualify for the measure numerator): A. Our hospital collects demographic information (such as self-reported race, national origin, primary language, and ethnicity data), and/or social determinant of health information on the majority of our patients. B. Our hospital has training for staff in culturally sensitive collection of demographics and/or social determinant of health information. C. Our hospital inputs demographic and/or social determinant of health information collected from patients into structured, interoperable data elements using a certified technology. Domain 3: Data Analysis

CMS MERIT Submission Info MUC2023-176	Description
	Effective data analysis can provide insights into which factors contribute to health disparities and how to respond. Please attest that your hospital engages in the following activities. Select all that apply (note: attestation of all elements is required to qualify for the measure numerator): A. Our hospital stratifies key performance indicators by demographic and/or social determinants of health variables to identify equity gaps and includes this information on hospital performance dashboards. Domain 4: Quality Improvement Health disparities are evidence that high quality care has not been delivered equitably to all patients. Engagement in quality improvement activities can improve quality of care for all patients. Select all that apply (note: attestation of all elements is required to qualify for the measure numerator): A. Our hospital participates in local, regional, or national quality improvement activities focused on reducing health disparities. Domain 5: Leadership Engagement Leaders and staff can improve their capacity to address disparities by demonstrating routine and thorough attention to equity and setting an organizational culture of equity. Please attest that your hospital engages in the following activities. Select all that apply (note: attestation of all elements is required to qualify for the measure numerator): A. Our hospital senior leadership, including chief executives and the entire hospital board of trustees, annually reviews our strategic plan for achieving health equity. B. Our hospital senior leadership, including chief executives and the entire hospital board of trustees, annually reviews key performance indicators stratified by demographic and/or social factors.
Denominator	The denominator for each hospital is 5, which represents the total number of questions. The measure is calculated as the number of complete attestations / total number of questions. There is no partial credit for any question. Attestation of all elements is required in order to qualify for the measure numerator.
Numerator exclusions	N/A
Denominator exclusions	N/A
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed

CMS MERIT Submission Info MUC2023-176	Description
If not fully developed, development stage	N/A
Target population	Facilities serving Medicare Fee for Service beneficiaries
Measure type	Structure
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.18.2. MUC2023-176 Hospital Commitment to Health Equity* Measure Evaluation

MUC2023-176 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Extensive scientific literature demonstrates poorer health outcomes and quality of care for certain groups based on race, ethnicity, sexual orientation, SES, disability status, and rural location. Facility/hospital leaders can drive change in culture to improve equity: The Agency for Healthcare Research and Quality and The Joint Commission identify the important role of hospital leadership in promoting a culture of quality and safety.[151, 152]	--	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.

[151] Leadership Role in Improving Patient Safety. Agency for Health Care Research and Quality. Patient Safety Primer, September 2019: Available at: https://psnet.ahrq.gov/primer/leadership-role-improving-safety
[152] Joint Commission on Accreditation of Healthcare Organizations, USA. Leadership committed to safety. Sentinel Event Alert. 2009 Aug 27;(43):1-3. PMID: 19757544

MUC2023-176 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Interventions taken by hospital leadership can positively influence culture. [153] Health care organizational culture can translate into better quality outcomes and experience of care. [154,155,156]		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	No denominator exclusions.	--	Most persons and entities in the quality program population are included in the specifications. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	No apparent burden for data collection falls on providers; the survey is completed at the facility level.	There is burden associated with hospitals/facilities making the needed investments to improve performance and develop the needed data to complete the survey.	The people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Equity is a CMS Meaningful Measures 2.0 priority.	Performance scores are not provided. Performance gap by subgroups is not tested. Submission indicates patients/persons were consulted regarding measure importance; however, no details (e.g., numbers responding positively) were provided.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound?	Entity-level reliability testing not performed (N/A for structure measures).	--	N/A

[153] Bradley EH, Brewster AL, McNatt Z, et al. How guiding coalitions promote positive culture change in hospitals: a longitudinal mixed methods interventional study. BMJ Qual Saf. 2018;27(3)(3):218-225. doi:10.1136/bmjqs-2017-006574.
[154] Ibid.
[155] Smith SA, Yount N, Sorra J. Exploring relationships between hospital patient safety culture and Consumer Reports safety scores. BMC health services research. 2017;17(1):143. doi:10.1186/s12913-017-2078-6.
[156] Keroack MA, Youngberg BJ, Cerese JL, Krsek C, Prellwitz LW, Trevelyan EW. Organizational factors associated with high performance in quality and safety in academic medical centers. Acad Med. 2007 Dec;82(12):1178-86. doi: 10.1097/ACM.0b013e318159e1ff. PMID: 18046123.

MUC2023-176 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(Context of Use)			
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Most equity domain criteria specify the required structures and processes for improving the measure score.	Empirical test of measure validity not reported. Some equity domain criteria are vaguely defined, e.g., domain 4, "Our hospital participates in local, regional, or national quality improvement activities focused on reducing health disparities."	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted.	--	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Most equity domain criteria focus on strategic planning and developing and sharing data that serve as feedback to administration and providers on performance by patient subgroups that are the focus of equity efforts, i.e., "foundational best practices." Measure aligns with 01660-01-C-HIQR measure currently in use.	Measured entities were not consulted regarding usability/value of the measure. A potential unintended consequence is diversion of resources away from other initiatives to make needed investments to improve in this area.	There is an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-176 Measure Reliability

Entity-level reliability testing not performed (N/A for structure measures).

3.19 MUC2023-181 30-Day Risk-Standardized All-Cause Emergency Department Visit Following an Inpatient Psychiatric Facility Discharge (IPF ED Visit measure)

Description: This measure assesses the proportion of patients ages 18 and older with an emergency department (ED) visit, including observation stays, for any cause within 30 days of discharge from an IPF, without subsequent admission.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

It is well-established that the first three months following IPF discharge, and particularly the first month, are a period of high risk for the patient[157]. This includes increased risk of suicidal ideation and self-harm. The rationale for this measure is to encourage IPFs to proactively focus on discharge planning and community reintegration at the time of the patient's IPF stay. The measure complements the 30-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an IPF (IPF Readmission) measure (#2860). The proposed measure will provide information on ED visits, including observation stays, without readmission.

Table 3.19.1. MUC2023-181 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-181	Description
Measure name	30-Day Risk-Standardized All-Cause Emergency Department Visit Following an Inpatient Psychiatric Facility Discharge (IPF ED Visit measure)
MUC ID	MUC2023-181

[157] Mutschler C, Lichtenstein S, Kidd SA, Davidson L. Transition experiences following psychiatric hospitalization: a systematic review of the literature. Community Ment Health J. 2019;55(8):1255–1274. Accessed xxx . https://doi.org/10.1007/s10597-019-00413-9.

CMS MERIT Submission Information MUC2023-181	Description
Cascade priority	Behavioral Health
Measure steward	Center for Medicare & Medicaid Services
Measure Developer	Mathematica
Program submitted to	Inpatient Psychiatric Facility Quality Reporting Program
Committee assigned to	Hospital committee
Related measures in the program	CBE 2860: Thirty-day all-cause unplanned readmission following psychiatric hospitalization in an inpatient psychiatric facility (IPF)
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	N/A
If previously used, please describe the history of the measure in CMS program	New measure never reviewed by Measure Applications Partnership (MAP) Workgroup or used in a CMS program
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
Measure Specification Details	
Measure Description	This measure assesses the proportion of patients ages 18 and older with an emergency department (ED) visit, including observation stays, for any cause within 30 days of discharge from an IPF, without subsequent admission.
Data source	Administrative Data (non-claims); Claims Data
Level of analysis	Facility
Numerator	The numerator consists of patients ages 18 and older with an ED visit, including observation stays, for any cause within 30 days of discharge from an IPF, without subsequent admission. An ED visit is defined as any ED visit or observation stay that does not result in an admission or transfer and occurs within 30 days after the discharge date from an eligible index admission to an IPF during the measurement period.

CMS MERIT Submission Information MUC2023-181	Description
Denominator	The measure population consists of patients with eligible index admissions to IPFs during the measurement period. Index admissions are defined as admissions to IPFs for patients with the following characteristics: • Ages 18 or older at admission • Discharged alive • Enrolled in Medicare fee-for-service Parts A and B during the 12 months before, the month of, and at least three months after the month of discharge • Discharged from an IPF with a principal diagnosis of a psychiatric or substance use disorder.
Numerator exclusions	N/A
Denominator exclusions	Denominator exclusions are as follows: • Discharged against medical advice from the IPF index admission • Transferred from the IPF to another care facility such as an acute care hospital, skilled nursing facility, long-term acute care facility, or residential program • Unreliable demographic and vital status data defined as the following: • Age greater than 115 years • Missing gender • Discharge status of “dead” but with subsequent admissions • Death date before admission date • Death date between the admission and discharge dates, but the discharge status was not “dead.”
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	Medicare Part A and B fee-for-service recipients ages 18 and older who were admitted to an IPF during the measurement period with a principal discharge diagnosis of a psychiatric disorder or dementia/Alzheimer’s disease.
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No

CMS MERIT Submission Information MUC2023-181	Description
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.19.2. MUC2023-181 IPF ED Visit Measure Evaluation

MUC2023-181 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Three systematic reviews are cited: (1) patients with SUD, psychotic, impulse control, or personality disorders were more at risk for an ED revisit following an inpatient psychiatric facility (IPF) discharge; (2) identifying risk factors associated with unplanned 30-day readmissions for patients with mental health diagnoses; (3) a review of seven interventions intended to reduce hospital readmission rates.[158, 159, 160] Follow-up care and discharge planning can increase continuity of care for Medicare beneficiaries, which increases patient engagement following discharge.[161]	Discussion of cited systematic review does not specify which interventions were found to be successful and notes that the relevant review did not conduct a quality assessment. While studies cited are suggestive of positive effect of discharge planning on reducing ED visits among patients with psychiatric diagnoses, the evidence summary does not explicitly connect these elements.	The study population is the same as the target quality program population.

[158] Mutschler C, Lichtenstein S, Kidd SA, Davidson L. Transition experiences following psychiatric hospitalization: a systematic review of the literature. Community Ment Health J. 2019;55(8):1255–1274. Accessed xxx . https://doi.org/10.1007/s10597-019-00413-9
[159] Zhou H, Ngune I, Albrecht MA, Della PR. Risk factors associated with 30-day unplanned hospital readmission for patients with mental illness. Int J Mental Health Nurs, 2023;32:30–53. Accessed April 17, 2023. https://doi.org/10.1111/inm.13042
[160] Benjenk I, Chen J. Effective mental health interventions to reduce hospital readmission rates: a systematic review. J Hosp Manag Health Policy. 2018;2(45). Accessed April 17, 2023. https://doi.org/10.21037/jhmhp.2018.08.05
[161] Brown JD, Bell N. Factors associated with the receipt of follow-up care among Medicare beneficiaries discharged from inpatient psychiatric facilities. J Behav Health Serv Res. 2023;50:221–227. Accessed April 17, 2023. doi: 10.1007/s11414-022-09810-7

MUC2023-181 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Integration of primary care with psychiatric inpatient services can improve management and reduce likelihood of ED visits.[162]		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	The measure numerator includes ED visits (including for observation stays) for any cause and excludes visits that result in an admission (which is captured by the companion readmission measure). Denominator exclusions appear appropriate (i.e., leaving AMA, transfer to another care facility) with the possible exception of exclusion for unreliable demographic data quality problems (sex missing, age >115, death date before discharge or admission date, diagnosis status of dead when later admitted).	Reliability and empirical validity testing were not performed on data elements. Data reliability issues (exclusions) are not addressed in the submission, e.g., under feasibility or data element reliability assessment, nor is the proportion of patients with unreliable data reported.	Most persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	All data elements are in defined fields in electronic sources.	--	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Measure scores suggest room for improvement: mean, 20.8; minimum, 12.0; 10th, 17.4; median 20.6; 90th, 24.5; maximum 31.8. There are differences in the ED visit rate by subgroups: sex (male > female), race (Black > non-Black), IPF length of stay (LOS) (less than 6 days >	Patients and caregivers were not consulted on importance/usability of the measure.	Most of the performance improvements to the benchmark have a significant impact on quality program population outcomes.

[162] Chung, J., Sadeghzadeh, K., & Sibdari, S. (2022). Psychiatric Hospitalization Associated with Emergency Department Visits. Issues in Mental Health Nursing, 43(6), 552-559.

MUC2023-181 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	6-15 days), and diagnosis (schizophrenia, substance use disorder > non-schizophrenia, non-substance use disorder).		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Random split-half correlation (facility, n=1,483); median ICC 0.70, mean ICC 0.69 suggest that more than 50% of entities have a reliability above 0.6. There is not enough detail for a more accurate estimate of the proportion of entities with reliability above 0.6.	--	Most or all entities have reliability above the threshold (0.60) *within* the quality program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Empiric Validity: Cross-measure validity using Spearman rank-order correlation compared IPF ED Visit measure and IPF Readmission measure (CBE #2860)(unit: facility); coefficient 0.42 (p<.0001). Empiric Validity: Known-group validity via t-tests compared mean differences in ED visit measure scores for subgroups and found significant differences based on sex (male > female, race (Black > White, dual status (dual > non-dual, IPF LOS (less than 6 days > 6-15 days), consistent with literature.[163]	No clinical guidelines are identified.	There is an association between the entity and the measure focus *within* the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Risk adjustment model includes patient-level demographics (age, sex), health status, comorbidities, dual eligibility (proxy social risk factor).	--	N/A

[163] Characteristics of Frequent Users of Three Hospital Emergency Departments. Agency for Healthcare Research and Quality. July 2017. Accessed April 17, 2023. https://www.ahrq.gov/patient-safety/settings/emergency-dept/frequent-use.html

MUC2023-181 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Response from measured entities was mixed, with 5 out of 9 agreeing the measure is easy to understand and useful for decision-making.	Almost half (4 out of 9) of measured entities who responded did not agree that the measure is useful for decision-making. The TEP noted the potential unintended consequence that providers may discourage patients from seeking care in the ED because of its effect on the performance score.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-181 Measure Reliability

The performance score is the percentage of patients with an ED visit for each entity.

The measure report indicates a reliability, calculated using ICC, of 0.69.

Interpretation:

The reported reliability calculated by ICC is 0.69 suggesting that well under 50% of the entities have reliability below 0.6. Further analysis to estimate the effect of population size on reliability should be performed.

3.20 MUC2023-188 Patient Safety Structural Measure

Description: The Patient Safety Structural Measure is an attestation-based measure that assesses whether hospitals demonstrate having a structure and culture that prioritizes patient safety.

Measure Type: Structure

Level of Analysis: Facility

Data Source(s): Provider (facility) data entry (attestation-based measure)

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Patient Safety Structural Measure to the Hospital Inpatient Quality Reporting (HIQR) program and to the Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program (PSS-Exempt PCHQR) measure set. This new measure is an attestation-based measure that indicates if the hospital's structure and culture prioritizes patient safety. The measure has five domains, each containing multiple statements that aim to capture the most salient structural and cultural elements of patient safety. Patient safety is a high-priority area for CMS, with "safety and resiliency" as a vital aspect of the agency's National Quality Strategy. This hospital-based measure aims to capture evidence-based, system-level practices to improve patient safety. The goal is to create a drive to action and improvement in patient safety, and to advance progress toward zero preventable harm. Scoring for this measure is based on a points system, with 0-5 points per five patient safety domains, with 5 being the highest awarded score. Affirmative attestation is required for each element and sub-elements to obtain credit for each domain. No points will be awarded for negative responses or no response for each question. This measure has never been submitted to the MUC and is not CBE endorsed.

Table 3.20.1. MUC2023-188 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-188	Description
Measure name	Patient Safety Structural Measure
MUC ID	MUC2023-188
Cascade priority	Safety
Measure steward	Centers for Medicare & Medicaid Services
Measure Developer	Yale/CORE

CMS MERIT Submission Information MUC2023-188	Description
Program submitted to	Hospital Inpatient Quality Reporting Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Committee assigned to	Hospital Committee
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	N/A
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
Measure Specification Details	
Measure Description	The Patient Safety Structural Measure is an attestation-based measure that assesses whether hospitals demonstrate having a structure and culture that prioritizes patient safety. The Patient Safety Structural Measure comprises five domains, each containing multiple statements that aim to capture the most salient structural and cultural elements of patient safety. This measure is designed to discern hospitals that practice a systems-based approach to safety, as demonstrated by leaders who prioritize and champion safety; a diverse group of patients and families meaningfully engaged as partners in safety; and practices indicating a culture of safety and continuous learning and improvement.
Data source	Provider (facility) data entry (attestation-based measure); Other
Level of analysis	Facility
Numerator	The hospital outcome is defined by the five patient safety domains, each containing multiple statements. A hospital must positively attest to all statements within a domain to receive one point for that domain (for a total of 0 – 5 points for the outcome). The five domains defining the numerator are: Domain 1: Leadership Commitment to Eliminating Preventable Harm; Domain 2: Strategic Planning & Organizational Policy; Domain 3: Culture of Safety & Learning Health System; Domain 4: Accountability & Transparency; and Domain 5: Patient & Family Engagement.
Denominator	The denominator for each facility is 5 domains. The five domains are:

CMS MERIT Submission Information MUC2023-188	Description
	Domain 1: Leadership Commitment to Eliminating Preventable Harm; Domain 2: Strategic Planning & Organizational Policy; Domain 3: Culture of Safety & Learning Health System; Domain 4: Accountability & Transparency; and Domain 5: Patient & Family Engagement.
Numerator exclusions	N/A
Denominator exclusions	N/A
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
Target population	Hospitals in the Hospital Inpatient Quality Reporting Program and hospitals in the Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
Measure type	Structure
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.20.2. MUC2023-188 Patient Safety Structural Measure Evaluation

MUC2023-188 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	A systematic review of 17 studies on the link between patient safety culture and outcomes indicate evidence of a relationship; however, studies finding a significant correlation are limited.[164]	No empirical evidence of an association in the study population.	The Patient Safety Structural Measure aligns with one of the four priority areas identified by the CMS National Quality Strategy, "Safety and Resiliency," and with the strategy goal: "Achieve zero preventable harm."
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	No denominator exclusions.	--	Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Data collection and reporting through a CMS Web Based Interface (MUC submission).	No explicit articulation of people, processes, or technology required. No workflow analysis conducted.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	9 of 9 (100%) patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar conditions.	No performance scores were reported.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Entity-level reliability testing not performed (N/A for structure measures).	--	N/A

[164] DiCuccio, M. H. (2015). The relationship between patient safety culture and patient outcomes. *Journal of Patient Safety, 11*(3), 135-142. https://www.jstor.org/stable/26633090

MUC2023-188 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	In a recent study of adverse events during hospitalization, researchers identified adverse events in almost one-quarter of admissions. Among these adverse events, more than one-fifth were deemed preventable and almost one-third were considered serious (i.e., caused harm that required intervention or prolonged recovery).[165] Systematic reviews (MERIT): A rapid review synthesizing high reliability organization frameworks, metrics, and implementation outcomes from 23 articles identified five strategies for High-Reliability Organizations (HROs): developing leadership, supporting a culture of safety, providing training and learning, building data systems, and implementation quality improvement interventions.[166] A systematic review of 33 studies identified interventions to promote safety culture in acute-care settings, including leader rounding and interdisciplinary rounds, unit-based interventions, and team training and communication initiatives.[167] A systematic review identified 122 publications focused on board oversight of care quality and safety, and impact on patient outcomes. These studies provide empirical support for an association	--	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[165] Bates, D. W., Levine, D. M., Salmasian, H., Syrowatka, A., Shahian, D. M., Lipsitz, S., Zebrowski, J.P., Myers, L.C., Logan, M.S., Roy, C.G & Mort, E. (2023). The safety of inpatient health care. *New England Journal of Medicine, 388*(2), 142-153. https://doi.org/10.1056/nejmsa2206117

[166] Veazie, S., Peterson, K., Bourne, D., Anderson, J., Damschroder, L., & Gunnar, W. (2022). Implementing high-reliability organization principles into practice: a rapid evidence review. *Journal of Patient Safety, 18*(1), e320-e328. doi:10.1097/PTS.0000000000007682.

[167] Weaver, S. J., Lubomksi, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., & Dy, S. M. (2013). Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of Internal Medicine, 158*(5_Part_2), 369-374. https://doi.org/10.7326/0003-4819-158-5-201303051-00002

MUC2023-188 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	between board oversight of quality and safety, and hospital performance.[168] Gray Literature: MERIT submission includes numerous publications (N=8) emphasizing that improving patient safety requires a systems-based approach that focuses on committed leadership, meaningfully engaged patients and families, and a culture that cultivates safety, continuous learning, and improvement.		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk-adjusted.	--	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	18 of 18 (100%) measured entities (or others) who responded when asked if information produced by the performance measure is easy to understand AND useful for decision-making. TEP: 15 of 18 (83%) answered "yes" when asked if the measure will be useful (MERIT).	There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-188 Measure Reliability

Entity-level reliability testing not performed (N/A for structure measures).

[168] Millar, R., Mannion, R., Freeman, T., & Davies, H. T. (2013). Hospital board oversight of quality and patient safety: a narrative review and synthesis of recent empirical research. *The Milbank Quarterly, 91*(4), 738-770. https://doi.org/10.1111/1468-0009.12032

3.21 MUC2023-196 Age Friendly Hospital Measure*

Description: This programmatic measure assesses hospital commitment to improving care for patients = 65 years of age receiving services in the hospital, operating room, or emergency department.

Measure Type: Structure

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Paper Medical Records; Registries

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Age Friendly Hospital Measure to the Hospital Inpatient Quality Reporting Program (HIQR) measure set for the FY 2025 Inpatient Prospective Payment System rule in support of an agency goals of Seamless Care Coordination and Person-Centered Care. This measure was previously submitted to the 2022 MUC List as two separate measures (MUC2022-032, Geriatrics Surgical Measure and MUC2022 -112, Geriatrics Hospital Measure) by the American College of Surgeons (ACS). The measures were combined after recommendation by the Measures Application Partnership (MAP) and was resubmitted as a single measure for consideration of addition into the HIQR Program for the FY 2025 Proposed Rule. This measure identifies a clinical framework based on evidence- based best practices that provide goal centered, clinically effective care for older patients. The proposed measure consists of attestations to 5 clinical care domains that span the clinical care pathway and, together, provide a framework for the optimal care of the older adult patient. This approach encourages a multidisciplinary, all-encompassing approach to their care.

Table 3.21.1. MUC2023-196 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-196	Description
Measure name	Age Friendly Hospital Measure
MUC ID	MUC2023-196
Cascade priority	Person-Centered Care
Measure steward	American College of Surgeons (ACS) - Primary Steward; American College of Emergency Physicians (ACEP), Institute for Healthcare Improvement (IHI)
Measure Developer	American College of Surgeons

CMS MERIT Submission Information MUC2023-196	Description
Program submitted to	Hospital Inpatient Quality Reporting Program
Committee assigned to	Hospital committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Measure previously submitted to MAP, refined and resubmitted per MAP recommendation
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted in the 2022 MUC List as MUC2022-112 to the Hospital Inpatient Quality Reporting Program. The MAP workgroups for that year were the Hospital, Rural Health Advisory Group, Health Equity Advisory Group, and the Coordinating Committee. The MAP Coordinating Committee conditionally supported the measure and recommended the stewards combine the Geriatrics Hospital Measure and Geriatrics Surgical Measure to reduce burden.
Is the measure currently used in a CMS program	No
If previously used, please describe the history of the measure in CMS program	N/A
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	N/A
CBE endorsement number if applicable	N/A
History of endorsement	N/A
Path to endorsement	N/A
Measure Specification Details	
Measure Description	This programmatic measure assesses hospital commitment to improving care for patients = 65 years of age receiving services in the hospital, operating room, or emergency department. The clinical measure consists of five domains that each address an essential aspect of clinical care for the older patient. The number of eligible domains (five) serves as the denominator. The verifiable attestation is met when all domain components are met for the majority of patients > 65. The numerator is the number of domains for which a hospital meets all attestations.
Data source	Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Paper Medical Records; Registries
Level of analysis	Facility
Numerator	Domain 1: Eliciting Patient Health Care Goals

CMS MERIT Submission Information MUC2023-196	Description
	Description: This domain focuses on obtaining a patient's health-related goals and treatment preferences, which will inform shared decision making and goal-concordant care. Please attest that your hospital engages in the following: 1. Established protocols are in place to ensure patient goals related to health care (e.g., health goals, treatment goals, living wills, identification of health care proxies, advance care planning) are obtained/reviewed and documented in the medical record. These goals are updated before major procedures and upon significant changes in clinical status. Domain 2: Responsible Medication Management Description: This domain aims to optimize medication management through monitoring of the pharmacological record for drugs that may be considered inappropriate in older adults due to increased risk of harm. Please attest that your hospital engages in the following: 1. Medications are reviewed for the purpose of identifying potentially inappropriate medications (PIMs) for older adults as defined by standard evidence-based guidelines, criteria, or protocols. Review should be undertaken upon admission, before major procedures, and/or upon significant changes in clinical status. Once identified, PIMS should be considered for discontinuation, and/or dose adjustment as indicated. Domain 3: Frailty Screening and Intervention (i.e., Mobility, Mentation, and Malnutrition) Description: This domain aims to screen patients for geriatric issues related to frailty including cognitive impairment/delirium, physical function/mobility, and malnutrition for the purpose of early detection and intervention where appropriate. Please attest that your hospital engages in the following: 1. Patients are screened for risks regarding mentation, mobility, and malnutrition using validated instruments ideally upon admission, before major procedures, and/or upon significant changes in clinical status. 2. Positive screens result in management plans including but not limited to minimizing delirium risks, encouraging early mobility, and implementing nutrition plans where appropriate. These plans should be included in discharge instructions and communicated to post-discharge facilities. 3. Data are collected on the rate of falls, decubitus ulcers, and 30-day readmission for patients > 65. These data are stratified by sex/gender, race, age, and ethnicity. 4. Protocols exist to reduce the risk of emergency department delirium by reducing length of emergency department stay with a goal of transferring a targeted

CMS MERIT Submission Information MUC2023-196	Description
	percentage of older patients out of the emergency department within 8 hours of arrival and/or within 3 hours of the decision to admit. Domain 4: Social Vulnerability (social isolation, economic insecurity, ageism, limited access to health care, caregiver stress, elder abuse) Description: This domain seeks to ensure that hospitals recognize the importance of social vulnerability screening of older adults and have systems in place to ensure that social issues are identified and addressed as part of the care plan. Please attest that your hospital engages in the following: 1. Older adults are screened for geriatric-specific social vulnerability including social isolation, economic insecurity, limited access to health care, caregiver stress, and elder abuse to identify those who may benefit from care plan modification. The assessments are performed on admission and again prior to discharge. 2. Positive screens for social vulnerability (including those that identify patients at risk of mistreatment) are addressed through intervention strategies. These strategies should include appropriate referrals and resources for patients upon discharge. Domain 5: Age Friendly Care Leadership Description: This domain seeks to ensure consistent quality of care for older adults through the identification of an age friendly champion and/or interprofessional committee tasked with ensuring compliance with all components of this measure. Please attest that your hospital engages in the following: 1. Our hospital designates a point person and/or interprofessional committee to specifically ensure age friendly care issues are prioritized, including those within this measure. This individual or committee oversees such things as quality related to older patients, identifies opportunities to provide education to staff, and updates hospital leadership on needs related to providing age friendly care. 2. Our hospital compiles quality data related to the Age Friendly Hospital measure. These data are stratified by sex/gender, race, age, and ethnicity and should be used to drive improvement cycles.
Denominator	The denominator for each hospital is 5.
Numerator exclusions	N/A
Denominator exclusions	N/A
Denominator exceptions	N/A

CMS MERIT Submission Information MUC2023-196	Description
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer, patients 65 and older
Measure type	Structure
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.21.2. MUC2023-196 Age Friendly Hospital Measure Evaluation

MUC2023-196 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	The US population is rapidly aging, and hospitals are increasingly faced with older patients who have complex medical, physiological, and psychosocial needs that are often inadequately addressed by the current healthcare infrastructure. The proposed measure consists of attestations to five clinical care domains that span the breadth of the clinical care pathway and, together, provide a framework for the optimal care of the older adult patient.	--	The study population is the same as the target quality program population.

MUC2023-196 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	The submission identifies 97 studies that link performance in one or more of the five clinical care domains to improved outcomes for elderly patients. The Age Friendly Hospital Measure incorporates key standards within the ACS Geriatric Surgery Verification Program (GSV) program, which follows the ACS Quality Model—the framework used across all ACS Quality programs, including the Trauma Center Verification Program, the Commission on Cancer (CoC), and the Metabolic and Bariatric Surgery Verification program, and so on.		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	An extensive multi-year beta testing process yielded the final attestation standards (MERIT). Independent sites were audited for attestation accuracy (results=100%; N=8).	--	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Data collection and reporting through web-based tool in CMS quality reporting portal (not otherwise specified). Sites reported no modifications to provider workflow required (N=760; identity of sites uncertain).	No explicit articulation of people, processes, or technology required.	The people, processes, and technology required for data collection and reporting match resources within the quality program population. Most entities in the quality program population have access to the people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	For face validity, 20 patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar conditions (MERIT; person identify unspecified).	No empirical evidence that the benefits exceed the burden.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

MUC2023-196 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Entity-level reliability testing not performed (N/A for structure measures).	--	N/A
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	The submission identifies 97 studies that link performance in one or more of the five clinical care domains to improved outcomes for elderly patients. The Beta Pilot process site visits identified the standards that were widely feasible and easily implemented as well as those that were more difficult and more complicated to adopt. These latter standards require a greater amount of time and, in many cases, technical support to implement but no standard was identified as unnecessary or too burdensome (MERIT). Face Validity: The measure developer identified standards of surgical care for aging adults. Steps to develop these standards were: 1) determine implementation feasibility for 30 selected standards, 2) identify barriers and best practices in their implementation, and 3) further refine these geriatric standards and verification process. Eight hospitals were chosen to participate in a pilot study of compliance with the standards. Program management (55%), immediate preoperative and intraoperative clinical care (62.5%), and postoperative clinical care (58%) had the highest mean percentage of Fully Compliant standards. Goals and decision making (30%), preoperative optimization (28%), and transitions of care (12.5%) had the lowest mean percentage of Fully Compliant standards. Best practices and barriers to	No explicit articulation of the ways an entity may improve performance on the measure focus (i.e., ways to increase the likelihood of attestation) (CBE). No logic model connecting the structure, activities, outputs, and outcomes that might suggest leading or lagging indicators of whether the measure is impactful (CBE).	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

MUC2023-196 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	implementation were identified across 13 of the 30 standards. Over 80% of the institutions reported that participation changed the surgical care provided for older adults (MERIT).		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Not risk adjusted.	--	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Using the data from the Beta Pilot, the CQGS team finalized the standards and developed educational and supportive materials to aid in the official GSV Program launch in July 2019 with release of Optimal Resources for Geriatric Surgery 2019 Standards (MERIT). 800 measured entities (or others) responded when asked if information produced by the performance measure is easy to understand AND useful for decision-making (MERIT; entity identify unspecified). Evaluating and visiting a wide variety of hospitals provided insight into the unique issues that different institutions face based on their size or location and was also effective in helping the CQGS identify several best practices in standard implementation.	Potential known unintended consequences in the geriatric population would be due to efforts around function/mobility. An anticipated increase in falls might occur as patients are encouraged to ambulate and/or management plans focus on efforts to mitigate deconditioning. If/when patients fall, ambulation efforts might be halted, which can then have the unintended consequences of deconditioning, restraint use, and/or pressure ulcers (MERIT). There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-196 Measure Reliability

Entity-level reliability testing not performed (N/A for structure measures).

3.22 MUC2023-199 Connection to Community Service Provider*

Description: Percent of patients 18 years of age or older who screen positive for one or more of the following health-related social needs (HRSNs): food insecurity, housing instability, transportation problems, utility help needs, or interpersonal safety; and had contact with a Community Service Provider (CSP) for at least one of their HRSNs within 60 days after discharge.

Measure Type: Process

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Standardized Patient Assessments; Patient Reported Data and Surveys: Patient-reported data and standardized social needs assessments are used to determine patients matching the denominator of screening for HRSNs and a positive result for at least one HRSN.

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the measure Connection to Community Service Provider to the Hospital Inpatient Quality Reporting (IQR) Program measure set. This measure was previously submitted by the measure developer, OCHIN, to the 2022 MUC List for consideration in the Merit-Based Incentive Payment System (MIPS) program (MUC2022-09) and will be implemented in the CY 2024 Physician Fee Schedule Final Rule. It has since been refined and resubmitted for consideration in the Hospital IQR program to encourage actionable steps to address patients' identified health-related social needs (HRSNs). CMS is considering adding this measure to the HIQR program in support of an agency-wide strategic vision to achieve equity across the health care system. CMS has specifically prioritized the identification of key drivers of health, such as HRSNs, as critical to improving health care quality. Despite recent adoption of two drivers of health measures in the Hospital IQR Program, however, capturing systematic referral to community service providers to address patients' unmet HRSNs is a persistent measurement gap in the program. Thus, the proposed action measure—in tandem with the complementary Resolution of At Least 1 Health-Related Social Need measure—would build upon existing quality measurement strategies to further a facility's understanding of populations served and, in turn, its focus on connecting patients with more holistic care and/or resources.

Table 3.22.1. MUC2023-199 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-199	Description
Measure name	Connection to Community Service Provider
MUC ID	MUC2023-199
Cascade priority	Equity

CMS MERIT Submission Information MUC2023-199	Description
Measure steward	OCHIN
Measure developer	OCHIN
Program submitted to	Hospital Inpatient Quality Reporting Program; Medicare Shared Savings Program
Committee assigned to	Hospital and Clinician Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Measure currently used in a CMS program being submitted as-is for a new or different program
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	This measure was used in the CMMI Accountable Health Communities Pilot from 2017-2022 and in MIPS, in which it was recommended for rulemaking. This measure is currently in use in the Merit-based Incentive Payment System-Quality Program.
Any other program the measure is in use	Merit-based Incentive Payment System-Quality; Accountable Health Communities Pilot
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Not Endorsed
CBE endorsement number if applicable	N/A
History of endorsement	N/A
Path to endorsement	N/A
Measure Specification Details	
Measure description	Percent of patients 18 years or older who screen positive for one or more of the following health related social needs (HRSNs): food insecurity, housing instability, transportation problems, utility help needs, or interpersonal safety; and had contact with a Community Service Provider (CSP) for at least one of their HRSNs within 60 days after discharge.
Data source	Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Standardized Patient Assessments; Patient-Reported Data and Surveys: Patient-reported data and standardized social needs assessments are used to determine patients matching the denominator of screening for HRSNs and a positive result for at least one HRSN.
Level of analysis	Facility

CMS MERIT Submission Information MUC2023-199	Description
Numerator	Number of patients 18 years of age or older at time of admission who had contact with a Community Service Provider (defined as any independent, for-profit, non-profit, state, territorial, or local agency capable of addressing core or supplemental health-related social needs) for at least one of their HRSNs within 60 days after discharge.
Denominator	Number of patients admitted to the hospital who are 18 years of age or older at time of admission who screened positive for one or more of the five core domains during the period of performance (quarterly).
Numerator exclusions	N/A
Denominator exclusions	• Patients who opt out of connection with Community Service Provider • Patients lost to follow-up after discharge
Denominator exceptions	N/A
Risk adjustment	No
Development status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	Process
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.22.2. MUC2023-199 Connection to Community Service Provider Measure Evaluation

MUC2023-199 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	CMMI's Comprehensive Primary Care Plus (CPC+) model reported in 2020 that 86% of ~1,500 Track 1 practices and 99% of ~1,500 Track 2 practices (together serving ~2.4M beneficiaries) are implementing DOH screening. Using a standard, validated screening tool, the CMS Accountable Health Communities (AHC) program has screened 1 million patients for HRSN in 21 states -- nearly 1/3 in hospital settings -- with 33% of beneficiaries screened having at least one HRSN. Of patients with at least one HRSN who were eligible for navigation, 74% of patients accepted navigation related to their HRSN, and 18% of patients accepting navigation either reported at least one HRSN resolved (14%) or connection with a CSP without resolution (4%).[169]	A list of citations is provided but submission does not summarize the literature cited.	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	When adjusting for bias and prevalence, agreement between the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) items was substantial or higher (kappa > 0.60) for all social risks except housing quality (kappa = 0.52). The YCLS and Children's Health Watch (CHW) had substantial agreement (kappa 0.75) on housing.[170] Sensitivity of each two-item combination was high for the US population and high-risk demographic groups compared with the 18-item US Department of Agriculture's Core Food Security Module (CFSM). Sensitivity ranged from 96.4% for items 2 and 3 for households with children and incomes <200% of the federal poverty line, to 99.8% for items 1 and 3 for Spanish-speaking households. (Results for all	Excluded persons: who opt out of connection with Community Service Provider or persons lost to follow-up after discharge. Some variability in the screening for health-related social need is attributable to the selection of instrument (CBE). Multiple low-cost, low-literacy tools are available for social risk screening in clinical settings, but psychometric data are very limited. More research is needed on clinic-based screening tool reliability and validity	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[169] CMMI. CPC Evaluation Annual Report. https://innovation.cms.gov/data-and-reports/2020/cpc-evaluation-annual-report-2
[170] Lewis, C. C., Wellman, R., Jones, S. M., Walsh-Bailey, C., Thompson, E., Derus, A., ... & Sharp, A. L. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *Journal of family medicine and primary care*, *9*(9), 5026.

MUC2023-199 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	combinations are available from the corresponding author upon request.) Specificity was lower, ranging from 73.7% for items 1 and 2 for households with children and incomes <100% of the federal poverty line, to 94.5% for items 2 and 3 for households with a respondent aged >60 years. Accuracy was high for all two-item combinations.[171] A Community Service Provider (CSP) is defined as any independent, for-profit, non-profit, state, territorial, or local agency capable of addressing core or supplemental health-related social needs.	as these factors should influence both adoption and utility.[172] Lack of specificity on what counts as a CSP.	
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Data to be reported through a Clinical Quality Measure (CQM) Registry (details unspecified). Data collection and reporting requires modification to workflow (details unspecified).	Patient-reported data and standardized assessments are used to determine patients matching the denominator of screening for HRSNs and a positive result for at least one HRSNs. EHR-and non-EHR electronic clinical data, as well as patient reported data, will be used to determine whether contact was made with a CSP. Administrative data will be used for measure stratification and ongoing performance monitoring (details unspecified).	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.

[171] Gundersen, C., Engelhard, E. E., Crumbaugh, A. S., & Seligman, H. K. (2017). Brief assessment of food insecurity accurately identifies high-risk US adults. *Public health nutrition*, *20*(8), 1367-1371.
[172] Henrikson, N. B., Blasi, P. R., Dorsey, C. N., Mettert, K. D., Nguyen, M. B., Walsh-Bailey, C., ... & Lewis, C. C. (2019). Psychometric and pragmatic properties of social risk screening tools: a systematic review. *American journal of preventive medicine*, *57*(6), S13-S24.

MUC2023-199 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	Using a standard, validated screening tool, the CMS Accountable Healthcare Communities program has screened 1 million patients for HRSN in 21 states—nearly 1/3 in hospital settings—with 33% of beneficiaries screened having at least one HRSN.[173] A reported social risk on the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) measures was strongly associated with having fair or poor self-rated health.[174] Household Food Security Survey (HFSS) questions 1 and 2 were most frequently endorsed among food-insecure families (92.5% and 81.9%, respectively). An affirmative response to either question 1 or 2 had a sensitivity of 97% and specificity of 83% and was associated with increased risk of reported poor/fair child health (adjusted odds ratio [aOR]: 1.56; P < 0.001), hospitalizations in their lifetime (aOR: 1.17; P < 0.001), and developmental risk (aOR: 1.60; P < 0.001).[175] 2441 of 3162 patients and/or caregivers who responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar.	No empirical evidence that the benefits exceed the burden.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	--	Entity-level reliability not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.

[173] CMMI. CPC Evaluation Annual Report. https://innovation.cms.gov/data-and-reports/2020/cpc-evaluation-annual-report-2
[174] Lewis, C. C., Wellman, R., Jones, S. M., Walsh-Bailey, C., Thompson, E., Derus, A., ... & Sharp, A. L. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *Journal of family medicine and primary care*, *9*(9), 5026.
[175] Hager, E. R., Quigg, A. M., Black, M. M., Coleman, S. M., Heeren, T., Rose-Jacobs, R., ... & Frank, D. A. (2010). Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics*, *126*(1), e26-e32.

MUC2023-199 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Guideline: The USPSTF provides a "B" recommendation that clinicians screen for Intimate Partner Violence (one of the HRSNs included in the denominator of the proposed measure) in women of reproductive age and provide or refer women who screen positive to ongoing support services. (Note: an update on this topic is in progress—last update April 19, 2023.) USPSTF recently released a technical brief on screening and interventions for social risk factors, which notes that social risk factors are mentioned in two-thirds of USPSTF recommendation statements, and six other professional medical organizations explicitly promote clinician engagement in social risk screening and referrals.[176]	No explicit articulation of the way an entity may improve performance on the measure focus.	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Strong recommendation to stratify the measures by race/ethnicity. Data from the AHC found racial/ethnic minorities were over-represented in the navigation-eligible groups. CMS has stated in its strategic plan that the imperative to stratify by race/ethnicity is a global issue for the Agency that applies to all measures.[177]	No explicit rationale for confounders included in the model.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	7 of 8 measured entities (or others) responded when asked if information produced by the performance measure is easy to understand AND useful for decision-making. The USPSTF report has notably highlighted the **lack** of unintended consequences encountered during implementation of social risk screening and intervention in	Potential for societal stigma and discrimination related to certain HRSNs (e.g., mental health issues, substance abuse) (CBE). Potential for language barriers to hinder effective communication between health care providers and patients (CBE).	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

[176] Eder, M., Henninger, M., Durbin, S., Iacocca, M. O., Martin, A., Gottlieb, L. M., & Lin, J. S. (2021). Screening and interventions for social risk factors: technical brief to support the US Preventive Services Task Force. *JAMA*, *326*(14), 1416-1428.
[177] CMS. Health Equity Fact Sheet. https://www.cms.gov/files/document/health-equity-fact-sheet.pdf

MUC2023-199 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	studies reporting these outcomes, despite any perceived barriers. Availability of health information exchanges (HIEs) that facilitate the coordination between health care providers and community organizations may facilitate.	Potential for low degree of trust in the health care system or fear of negative consequences (e.g., immigration status concerns) (CBE). One potential unintended consequence of the measure is that hospitals might not be equipped to act on it due, in part, to the lack of community resources. This challenge was noted as a primary barrier to connecting beneficiaries to resources in the AHC Year 1 evaluation. There is a well-documented and well-tested catalog of additional tools, infrastructure, and investments that can be implemented to support practices in acting on this measure. Other considerations include: 1) Locations with limited availability of resources, such as social workers or community support programs 2) Fragmented health care system with poor coordination among providers and community organizations 3) Rural or remote areas may have limited access to social services and community resources 4) Locations with persistent economic inequality may make it difficult to fully address HRSNs	

MUC2023-199 Measure Reliability

The performance score is the ratio of the number of patients who reported contact with a Community Service Provider for a Health-Related Social Need (HRSN) to the number of patients who screened positive for one or more HRSNs.

The measure report indicates a median signal-to-noise reliability of 0.6, but it appears that this is a measure of the agreement between screening tools. Agreement with other tools may address validity not signal-to-noise reliability.

Reliability was not analyzed for this measure according to the report provided. The single value of 0.18 (reported as the mean, minimum, and maximum) is not adequate information to simulate or assess reliability for this measure.

3.23 MUC2023-210 Resolution of At Least 1 Health-Related Social Need*

Description: Percent of patients 18 years or older who screen positive for one or more of the following health related social needs (HRSNs): food insecurity, housing instability, transportation problems, utility help needs, or interpersonal safety; and report that at least 1 of their HRSNs was resolved within 12 months after discharge.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Standardized Patient Assessments; Patient-reported data and standardized social needs assessments are used to determine patients matching the denominator of screening for HRSNs and a positive result for at least one HRSN.; Patient-Reported Data and Surveys.

Development Status: Fully Developed

Endorsement Status: Not Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the measure Resolution of At Least 1 Health-Related Social Need to the Hospital Inpatient Quality Reporting (IQR) Program measure set in support of an agency-wide strategic vision to achieve equity across the health care system. This measure was submitted to the 2022 MUC List (2022 MUC 111) for consideration of inclusion in the Merit-Based Incentive Payment System (MIPS) program; however, the measure was not finalized in any program at this time. This measure is now being submitted by the measure developer, OCHIN, for consideration in the Hospital IQR Program. CMS has specifically prioritized the identification of key drivers of health, such as HRSNs, as critical to improving health care quality. Despite recent adoption of two drivers of health measures in the Hospital IQR Program, however, capturing eventual resolution of patients' unmet HRSNs is a persistent measurement gap in the program. Thus, the proposed action measure—in tandem with the complementary Connection to Community Service Provider measure—would build upon existing quality measurement strategies to further a facility's understanding of populations served and, in turn, its focus on meaningfully and holistically addressing patient needs.

Table 3.23.1. MUC2023-210 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-210	Description
Measure name	Resolution of At Least 1 Health-Related Social Need
MUC ID	MUC2023-210
Cascade priority	Equity

CMS MERIT Submission Information MUC2023-210	Description
Measure steward	OCHIN
Measure Developer	OCHIN
Program submitted to	Hospital Inpatient Quality Reporting Program; Medicare Shared Savings Program
Committee assigned to	Hospital and Clinician Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Yes
If not a new measure, then describe the history of this measure in prior MUC list inclusion	N/A
Is the measure currently used in a CMS program	Merit-based Incentive Payment System-Quality; Accountable Health Communities Pilot
If previously used, please describe the history of the measure in CMS program	Measure currently used in a CMS program being submitted as-is for a new or different program. CMMI Accountable Health Communities Pilot (2017-2022); MIPS (recommended for rulemaking)
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	N/A
CBE endorsement number if applicable	N/A
History of endorsement	Not Endorsed
Path to endorsement	Unknown
Measure Specification Details	
Measure Description	Percent of patients 18 years or older who screen positive for 1 or more of the following health related social needs (HRSNs): food insecurity, housing instability, transportation problems, utility help needs, or interpersonal safety; and report that at least 1 of their HRSNs was resolved within 12 months after discharge.
Data source	Administrative Data (non-claims); Claims Data; Electronic Clinical Data (non-EHR); Electronic Health Record; Standardized Patient Assessments; Patient-reported data and standardized social needs assessments are used to determine patients matching the denominator of

CMS MERIT Submission Information MUC2023-210	Description
	screening for HRSNs and a positive result for at least one HRSN.; Patient-Reported Data and Surveys. EHR-and non-EHR electronic clinical data, as well as patient reported data, will be used to determine whether contact was made with a CSP. Administrative data will be used for measure stratification and ongoing performance monitoring.
Level of analysis	Facility
Numerator	Number of patients 18 or older at time of admission who report that at least one of their HRSNs was resolved within 12 months after discharge (quarterly).
Denominator	Number of patients admitted to the hospital who are 18 or older at time of admission who screened positive for one or more of the 5 core domains in the 12 months prior to the period of performance (quarterly).
Numerator exclusions	N/A
Denominator exclusions	• Patients who opt out of connection with Community Service Provider • Patients lost to follow-up after discharge
Denominator exceptions	N/A
Risk adjustment	No
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	All payer
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.23.2. MUC2023-210 Resolution of At Least 1 Health-Related Social Need Measure Evaluation

MUC2023-210 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	CMMI's Comprehensive Primary Care Plus (CPC+) model reported in 2020 that 86% of ~1,500 Track 1 practices and 99% of ~1,500 Track 2 practices (together serving ~2.4M beneficiaries) are implementing DOH screening. Using a standard, validated screening tool, the CMS Accountable Health Communities (AHC) program has screened 1 million patients for HRSN in 21 states -- nearly 1/3 in hospital settings -- with 33% of beneficiaries screened having at least one HRSN. Of patients with at least one HRSN who were eligible for navigation, 74% of patients accepted navigation related to their HRSN, and 18% of patients accepting navigation either reported at least one HRSN resolved (14%) or connection with a CSP without resolution (4%).[178] The measure developer summarized the relevance of the measure to the Centers for Medicare and Medicaid Services, they did not provide a summary of the literature on the benefits of measuring each of the 'five core domains' used to operationalize determinants of health.	--	While the study population differs from the target quality program population, the importance for the selected program population can be extrapolated.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	When adjusting for bias and prevalence, agreement between the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) items was substantial or higher (kappa > 0.60) for all social risks except housing quality (kappa = 0.52). The YCLS and Children's Health Watch (CHW) had substantial agreement (kappa 0.75) on housing.[179] Sensitivity of each two-item combination was high for the US population and high-risk demographic groups compared with the eighteen-item US Department of Agriculture's Core Food Security Module (CFSM). Sensitivity ranged from 96.4% for	Excluded persons: Those who opt out of connection with Community Service Provider or who are lost to follow-up after discharge. Some variability in the screening for health-related social need attributable to the selection of instrument (CBE). Multiple low-cost, low-literacy tools are available for social risk screening in clinical	Most persons and entities in the quality program population are included in the specification. Data element reliability and validity extrapolate to the quality program population.

[178] CMMI. CPC Evaluation Annual Report. https://innovation.cms.gov/data-and-reports/2020/cpc-evaluation-annual-report-2
[179] Lewis, C. C., Wellman, R., Jones, S. M., Walsh-Bailey, C., Thompson, E., Derus, A., ... & Sharp, A. L. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *Journal of family medicine and primary care*, *9*(9), 5026.

MUC2023-210 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	items 2 and 3 for households with children and incomes <200% of the federal poverty line, to 99.8% for items 1 and 3 for Spanish-speaking households. Specificity was lower, ranging from 73.7% for items 1 and 2 for households with children and incomes <100% of the federal poverty line, to 94.5% for items 2 and 3 for households with a respondent aged >60 years. Accuracy was high for all two-item combinations.[180] A Community Service Provider (CSP) is defined as any independent, for-profit, non-profit, state, territorial, or local agency capable of addressing core or supplemental health-related social needs.	settings, but psychometric data are very limited.	
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Data to be reported through a Clinical Quality Measure (CQM) Registry (details unspecified). Data collection and reporting requires modification to workflow (details unspecified).	Patient-reported data and standardized assessments are used to determine patients matching the denominator of screening for HRSNs and a positive result for at least one HRSNs. EHR-and non-EHR electronic clinical data, as well as patient reported data, will be used to determine whether contact was made with a CSP. Administrative data will be used for measure stratification and ongoing performance monitoring (details unspecified).	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes?	Using a standard, validated screening tool, the CMS Accountable Healthcare Communities program has screened 1 million patients for HRSN in 21 states—nearly 1/3 in	Performance scores not reported. No empirical evidence that the benefits exceed the burden.	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

[180] Gundersen, C., Engelhard, E. E., Crumbaugh, A. S., & Seligman, H. K. (2017). Brief assessment of food insecurity accurately identifies high-risk US adults. *Public health nutrition*, *20*(8), 1367-1371.

MUC2023-210 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
(*Context of Use)*	hospital settings—with 33% of beneficiaries screened having at least one HRSN.[181] A reported social risk on the Accountable Health Communities (AHC) and Your Current Life Situation (YCLS) measures was strongly associated with having fair or poor self-rated health.[182] Household Food Security Survey (HFSS) questions 1 and 2 were most frequently endorsed among food-insecure families (92.5% and 81.9%, respectively). An affirmative response to either question 1 or 2 had a sensitivity of 97% and specificity of 83% and was associated with increased risk of reported poor/fair child health (adjusted odds ratio [aOR]: 1.56; P < .001), hospitalizations in their lifetime (aOR: 1.17; P < 0.001), and developmental risk (aOR: 1.60; P < 0.001).[183] 2441 of 3162 patients and/or caregivers responded to the question asking whether information from the measure (e.g., the measured outcome or process) is important to know about AND can help improve care for patients in similar situations or with similar.		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	--	Entity-level reliability not reported.	Unable to determine if entities have reliability above the threshold (0.60) *within* the quality program population.

[181] CMMI. CPC Evaluation Annual Report. https://innovation.cms.gov/data-and-reports/2020/cpc-evaluation-annual-report-2

[182] Lewis, C. C., Wellman, R., Jones, S. M., Walsh-Bailey, C., Thompson, E., Derus, A., ... & Sharp, A. L. (2020). Comparing the performance of two social risk screening tools in a vulnerable subpopulation. *Journal of family medicine and primary care*, *9*(9), 5026.

[183] Hager, E. R., Quigg, A. M., Black, M. M., Coleman, S. M., Heeren, T., Rose-Jacobs, R., ... & Frank, D. A. (2010). Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics*, *126*(1), e26-e32.

MUC2023-210 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Guideline: The USPSTF provides a "B" recommendation that clinicians screen for Intimate Partner Violence (one of the HRSNs included in the denominator of the proposed measure) in women of reproductive age and provide or refer women who screen positive to ongoing support services. (Note: an update on this topic is in progress—last update April 19, 2023.) USPSTF recently released a technical brief on screening and interventions for social risk factors which notes that social risk factors are mentioned in two-thirds of USPSTF recommendation statements, and six other professional medical organizations explicitly promote clinician engagement in social risk screening and referrals.[184]	No explicit articulation of the way an entity may improve performance on the measure focus.	There is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	Strong recommendation to stratify the measures by race/ethnicity. Data from the AHC found racial/ethnic minorities were over-represented in the navigation-eligible groups.[185] CMS has stated in its strategic plan that the imperative to stratify by race/ethnicity is a global issue for the agency that applies to all measures.[186]	No explicit rationale for confounders included in the model.	N/A

[184] Eder, M., Henninger, M., Durbin, S., Iacocca, M. O., Martin, A., Gottlieb, L. M., & Lin, J. S. (2021). Screening and interventions for social risk factors: technical brief to support the US Preventive Services Task Force. *JAMA*, *326*(14), 1416-1428.
[185] CMMI. CPC Evaluation Annual Report. https://innovation.cms.gov/data-and-reports/2020/cpc-evaluation-annual-report-2
[186] CMS. Health Equity Fact Sheet. https://www.cms.gov/files/document/health-equity-fact-sheet.pdf

MUC2023-210 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	7 of 8 (87%) measured entities (or others) responded when asked if information produced by the performance measure is easy to understand AND useful for decision-making. USPSTF report has notably highlighted the **lack** of unintended consequences encountered during implementation of social risk screening and intervention in studies reporting these outcomes, despite any perceived barriers.[187] Reasonable availability of health information exchanges (HIEs) that facilitate the coordination between health care providers and community organizations.	Potential for societal stigma and discrimination related to certain HRSNs (e.g., housing insecurity, experiences of intimate partner violence) (CBE). One potential unintended consequence of the measure is that hospitals might not be equipped to act on it due, in part, to the lack of community resources. This challenge was noted as a primary barrier to connecting beneficiaries to resources in the AHC Year 1 evaluation. There is a well-documented and well-tested catalog of additional tools, infrastructure, and investments that can be implemented to support practices in acting on this measure. Other considerations include: 1) Locations with limited availability of resources, such as social workers or community support programs 2) Fragmented health care system with poor coordination among providers and community organizations 3) Rural or remote areas may have limited access to social services and community resources 4) Locations with persistent economic inequality may make it difficult to fully address HRSNs.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

[187] Eder, M., Henninger, M., Durbin, S., Iacocca, M. O., Martin, A., Gottlieb, L. M., & Lin, J. S. (2021). Screening and interventions for social risk factors: technical brief to support the US Preventive Services Task Force. *JAMA*, *326*(14), 1416-1428.

MUC2023-210 Measure Reliability

The performance score is ratio of the number of patients who reported at least one HRSN resolved to the number of patients who screened positive for one or more HRSNs.

The measure report indicates a median signal-to-noise reliability of 0.6, but it appears that this is a measure of the agreement between screening tools. Agreement with other tools may address validity but not signal-to-noise reliability.

Reliability was not analyzed for this measure according to the report provided. The single value of 0.18 (reported as the mean, minimum, and maximum) is not adequate information to simulate or assess reliability for this measure.

3.24 MUC2023-219 Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (Stratified for Oncology locations)

Description: Annual risk-adjusted standardized infection ratio (SIR) of central line-associated bloodstream infections (CLABSI) among adults and children hospitalized as inpatients at acute-care hospitals, oncology hospitals, and long-term acute-care hospitals.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Electronic Health Record; Paper Medical Records

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (Stratified for Oncology locations) measure into the Hospital Inpatient Quality Reporting (HIQR) measure set. This measure currently exists in multiple CMS programs such as the Hospital Value-Based program (HVBP) and the Hospital-Acquired Conditions (HAC) program and is returning to the MUC list for inclusion into the HIQR program for the use of calculating Standard Infection Ratios (SIR) specific to Oncology Locations. CLABSI infections are serious and typically cause prolonged hospital stays, increased cost, and are associated with a higher risk of mortality. These risks are even greater for immunosuppressed patients. Fortunately, there is evidence-based literature to support the prevention of CLABSIs through proper insertion techniques and central-line management. As it stands, oncology patient SIR data is currently captured only through the Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program (PSS-Exempt PCHQR) measure set. However, not all oncology patients are seen in PCHs, with up to 90% of the oncology or cancer patients receiving care in an acute-care hospital. CMS would like to capture these patients receiving care in an acute-care hospitals' IQR program and be able to compare the care that is delivered in the acute-care hospitals with that which is delivered in the PCHs.

Table 3.24.1. MUC2023-219 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-219	Description
Measure name	Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (Stratified for Oncology locations)
MUC ID	MUC2023-219
Cascade priority	Safety
Measure steward	Centers for Disease Control and Prevention

CMS MERIT Submission Information MUC2023-219	Description
Measure Developer	Centers for Disease Control and Prevention
Program submitted to	Hospital Inpatient Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	Measure currently used in a CMS program being submitted as-is for a new or different program
If not a new measure, then describe the history of this measure in prior MUC list inclusion	Measure was previously submitted in 2019 as MUC19-19 to the Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting (PCHQR) program. The MAP Hospital Workgroup reviewed the 2019 Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting (PCHQR) program that year and their recommendation was in support of the measure. Additionally, the measure was published in 2014 as S0139. It was reviewed by the 2014 Hospital workgroup in the 2014 Hospital-Acquired Condition Reduction Program, Hospital Inpatient Quality Reporting, Hospital Value-Based Purchasing, and Medicare Shared Savings. The recommendation of the MAP was conditional support.
Is the measure currently used in a CMS program	Yes
If previously used, please describe the history of the measure in CMS program	This measure has been in use since 2011. The measure will be used to track CLABSI hospital-associated infections and provides a mechanism for facilities to identify improvements and evaluate prevention efforts. #1716 - NHSN Facility-wide Inpatient Hospital-onset MRSA Bacteremia Outcome Measure #1717 - NHSN Facility-wide Inpatient Hospital-onset CDI Outcome Measure #0753 - ACS-CDC Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure #0138-Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio
Any other program the measure is in use	Hospital Inpatient Quality Reporting Program, Hospital Value-Based Purchasing Program, Hospital-Acquired Condition Reduction Program, Long-Term Care (LTC) Hospital Quality Reporting Program, Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program.
Is this measure being proposed to meet a statutory requirement?	N/A
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE 0139
History of endorsement	Most recently endorsed in 2019. The measure is being stratified by inpatients at acute-care hospitals who are on oncology units.
Path to endorsement	Year of next anticipated CDP endorsement review: 2023

CMS MERIT Submission Information MUC2023-219	Description
Measure Specification Details	
Measure Description	Annual risk-adjusted standardized infection ratio (SIR) of central line-associated bloodstream infections (CLABSI) among adults and children hospitalized as inpatients at acute-care hospitals, oncology hospitals, and long-term acute-care hospitals. SIR is reported annually and is calculated by dividing the number of observed CLABSIs by the number of predicted CLABSIs.
Data source	Electronic Health Record; Paper Medical Records
Level of analysis	Facility
Numerator	Number of annually observed central line-associated bloodstream infections (CLABSI) in hospital inpatients.
Denominator	Number of annually predicted central-line associated bloodstream infections (CLABSI) in hospital inpatients.
Numerator exclusions	The following devices are not considered central lines and are excluded: Arterial catheters unless in the pulmonary artery, aorta, or umbilical artery, Arteriovenous fistula, Arteriovenous graft, Atrial catheters (also known as transthoracic intra-cardiac catheters, those catheters inserted directly into the right or left atrium via the heart wall), Extracorporeal life support (ECMO), Hemodialysis reliable outflow (HERO) dialysis catheter, Intra-aortic balloon pump (IABP) devices, Peripheral IV or Midlines, Ventricular Assist Device (VAD). CLABSI events reported to NHSN as mucosal barrier injury laboratory-confirmed bloodstream infections (MBI-LCBIs) are excluded.
Denominator exclusions	The following devices are not considered central lines and are excluded: Arterial catheters unless in the pulmonary artery, aorta, or umbilical artery, Arteriovenous fistula, Arteriovenous graft, Atrial catheters (also known as transthoracic intra-cardiac catheters, those catheters inserted directly into the right or left atrium via the heart wall), Extracorporeal life support (ECMO), Hemodialysis reliable outflow (HERO) dialysis catheter, Intra-aortic balloon pump (IABP) devices, Peripheral IV or Midlines, Ventricular Assist Device (VAD). CLABSI events reported to NHSN as mucosal barrier injury laboratory-confirmed bloodstream infections (MBI-LCBIs) are excluded.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A

CMS MERIT Submission Information MUC2023-219	Description
Target population	Inpatients at acute-care hospitals on oncology units.
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.24.2. MUC2023-219 Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (Stratified for Oncology locations) Measure Evaluation

MUC2023-219 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	A recent study of four hospitals in Ohio and Michigan found that patients who developed a central line-associated blood stream infection (CLABSI) were 36.6% more likely to die in the hospital and were 37% more likely to be readmitted.[188] CLABSIs are preventable and are associated with increased morbidity and mortality, cost, and patient length of stay.[189]	--	The study population is the same as the target quality program population.

[188] Chovanec K, Arsene C, Gomez C, Brixey M, Tolles D, Galliers JW, Kopaniasz R, Bobash T, Goodwin L. Association of CLABSI With Hospital Length of Stay, Readmission Rates, and Mortality: A Retrospective Review. Worldviews Evid Based Nurs. 2021 Dec;18(6):332-338.
[189] Burke C, Jakub K, Kellar I. Adherence to the central line bundle in intensive care: An integrative review. Am J Infect Control. 2021 Jul;49(7):937-956.

MUC2023-219 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Persons in oncology units often have compromised immune systems due to their underlying malignancy or treatments like chemotherapy. This makes them particularly vulnerable to infections, including CLABSIs (CBE). A CLABSI in an oncology patient can have particularly severe consequences (CBE).		
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	--	No empirical evidence of conformance in the study population.	Unable to determine if persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Some data elements are in defined fields in electronic sources.	Some data elements require manual abstraction. No explicit articulation of people, processes, or technology required.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	The annual 2022 SIR for the oncology locations is 0.811 (SIR Goal=0.25). The HHS reduction goal for 2020 is a 25% reduction goal from the 2015 baseline. The Cumulative Attributable Difference (CAD) in the Oncology data was 400.554, indicating that at least 401 infections would need to be prevented in order to meet the HAI reduction goal of 25% (SIR Goal = 0.25) (MERIT).	--	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.

MUC2023-219 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Improvement in population health with achievement at the benchmark of care (rate from 0.031% to 0.001%; cases from 1,502 to 575).		
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Signal to Noise: About 40% of entities have reliability above 0.6.	About 60% of entities have reliability below 0.6.	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Guidelines: Weigh the risks and benefits of placing a central venous device at a recommended site to reduce infectious complications against the risk for mechanical complications (e.g., pneumothorax, subclavian artery puncture, subclavian vein laceration, subclavian vein stenosis, hemothorax, thrombosis, air embolism, and catheter misplacement). Category IA.[190] Literature: Submission includes several recent studies demonstrating the association between CLABSI prevention activities and CLABSI rates.[191,192] Empiric Validity: A weak but significant positive association was found between facility CLABSI and CLABSI SIRs, rho=0.16 (p-value=0.0121).	Empiric validity: Uncertainty about whether the quality construct or unrelated confounders are responsible for the observed association.	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	RA model includes: Person factors: patient location Entity factors: medical school affiliation, facility bed size, facility type. Empirical evidence of discrimination (none), calibration (Root mean squared error (RMSE) - 1.43 vs. 1.50 null -	No explicit rationale for confounders included in the model.	N/A

[190] O'Grady NP, Alexander M, Burns LA, Dellinger EP, Garland J, Heard SO, Lipsett PA, Masur H, Mermel LA, Pearson ML, Raad II, Randolph AG, Rupp ME, Saint S; Healthcare Infection Control Practices Advisory Committee (HICPAC). Guidelines for the prevention of intravascular catheter-related infections. Clin Infect Dis. 2011 May;52(9):e162-93.
[191] Grigonis AM, Dawson AM, Burkett M, Dylag A, Sears M, Helber B, Snyder LK. Use of a Central Catheter Maintenance Bundle in Long-Term Acute Care Hospitals. Am J Crit Care. 2016 Mar;25(2):165-72.
[192] Hugo, M. C., Rzucidlo, R. R., Weisert, L. M., Parakati, I., & Schroeder, S. K. (2022). A Quality Improvement Initiative to Increase Central Line Maintenance Bundle Compliance through Nursingled Rounds. Pediatric quality & safety, 7(1), e515.

MUC2023-219 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	lower values are better), or goodness-of-fit (Dispersion-based R2 - 0.16 vs. 0.00 for intercept only - higher values are better).		
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Technical advisory group: Healthcare Infection Control Practices Advisory Committee (HICPAC). CDC provides extensive guidance for the prevention of CLABSI. Developers predict only a weak correlation between the CAUTI (MUC2023-220) and CLABSI measures, as some facilities may choose to focus quality improvement on the prevention of a single HAI (CLABSI or CLABSI) due to resource limitations (MERIT). Even though CLABSI prevention bundles have been proven to reduce CLABSI rates, studies continue to show that there is still limited adherence to all elements in the bundle with compliance with the following elements most frequently reported: hand hygiene, site insertion choice, chlorhexidine skin prep, and dressings.[193]	There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve. In general, populations or entities with limited financial, human, or material resources can hinder the adoption of new practices or technologies (CBE): 1. Evidence-based guidelines and protocols for CLABSI prevention. 2. Financial resources for training, materials, and technology. 3. Personnel, including clinical staff, infection control specialists, and quality improvement teams. 4. Training materials and modules. 5. Data collection and monitoring tools.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

MUC2023-219 Measure Reliability

The performance score is a ratio of observed (O) to expected (P) events. Expected events are calculated from the risk-adjusted model.

Reliability (signal-to-noise) is calculated by $\frac{\sigma^2_{between}}{\sigma^2_{between}+\sigma^2_{within}}$. $\sigma^2_{between}$ is estimated by the variance of the performance score across the 411 entities. σ^2_{within} or Var(O/P) is estimated by 1/P (O is assumed to follow a Poisson distribution with mean P, so Var(O) = P and Var(O/P) = P/P^2 = 1/P. This means that the reliability of each entity is dependent on P, the number of expected events.

[193] Burke C, Jakub K, Kellar I. Adherence to the central line bundle in intensive care: An integrative review. Am J Infect Control. 2021 Jul;49(7):937-956.

The measure report indicates a median signal-to-noise reliability of 0.52across 411 entities.

Simulated decile tables:
Computer simulation was used to create a dataset that closely mirrors the mean, standard deviation, and percentile information provided for the performance score and calculated reliability.

For Table 3.24.3, entities were sorted by performance score, and the average score by decile (estimated from the simulated data) is reported along with the number of entities included in each average. Average, standard deviation, and minimum and maximum scores are also included.

Table 3.24.3. Importance (Decile by performance score)

MUC2023-219	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score	0.703 (0.541)	0	0	0.148	0.319	0.459	0.574	0.717	0.848	0.985	1.189	1.810	3.411
Entities	411	43	42	41	41	41	41	41	41	41	41	41	1

For Table 3.23.4, entities were sorted by reliability, and the average reliability by decile (estimated from the simulated data) is reported along with the number of entities included in each average, and the average number of expected events. Average, minimum, and maximum reliability and expected events are also included. Note that because reliability is based on P, this is equivalent to sorting entities by the number of expected events.

Table 3.24.4. Reliability (Decile by Denominator-Expected Events, P)

MUC2023-219	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Expected Events	7.6	1.0	1.2	1.6	2.1	2.6	3.3	4.3	5.7	8.8	15.4	30.8	65.1
Mean Reliability	0.55	0.23	0.26	0.32	0.38	0.43	0.49	0.56	0.62	0.71	0.82	0.89	0.95
Entities	411	1	42	41	41	41	41	41	41	41	41	41	1

Assumptions:

The information provided for the measure score was based on 454 entities, and the reliability information was based on 411 entities. The 411 entities were simulated based on the mean, standard deviation, and percentile information for the 454 entities.

Interpretation:

The number of expected events, P is dependent on the patient population (the more patients treated, the higher the expected number of events) and the risk based on patient mix (the higher the risk, the higher the expected number of events). For this measure, the number of expected events determines the reliability of an entity:

The reliability for each entity is $\frac{\sigma^2_{between}}{\sigma^2_{between}+\sigma^2_{within}}$. $\sigma^2_{between}$ is estimated by the between entity standard deviation of the score: $0.541^2 = 0.2927$, and σ^2_{within} is estimated by 1/P. The reliability for each entity is calculated by $\frac{0.2927}{0.2927+\frac{1}{P}}$.

P must be at least 5.1 for a reliability above 0.6. Based on the data provided, more than 60% of the entities are likely to have a reliability of less than 0.6.

3.25 MUC2023-220 Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (Stratified for Oncology locations)

Description: Annual risk-adjusted standardized infection ratio (SIR) of catheter-associated urinary tract infections (CAUTI) among adults and children hospitalized as inpatients at acute-care hospitals, oncology hospitals, long-term acute-care hospitals, and acute-care rehabilitation hospitals.

Measure Type: Outcome

Level of Analysis: Facility

Data Source(s): Electronic Health Record; Paper Medical Records

Development Status: Fully Developed

Endorsement Status: Endorsed

CMS-Provided Rationale for Measure Consideration:

CMS is considering adding the Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (Stratified for Oncology locations) measure into the Hospital Inpatient Quality Reporting (HIQR) measure set. This measure currently exists in multiple CMS programs such as the Hospital Value-Based program (HVBP) and the Hospital-Acquired Conditions (HAC) program and is returning to the MUC list for inclusion into the HIQR program for the use of calculating Standard Infection Ratios (SIR) specific to Oncology Locations. CLABSI infections are serious and typically cause prolonged hospital stays, increase cost, and are associated with a higher risk of mortality. These risks are even greater for immunosuppressed patients. Fortunately, there is evidence-based literature to support the prevention of CAUTIs through proper insertion techniques and proper line management. As it stands, oncology patient SIR data is currently captured only through the Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program (PSS-Exempt PCHQR) measure set. However, not all oncology patients are seen in PCH's, with up to 90% of the oncology or cancer patients receiving care in an acute-care hospital. CMS would like to capture these patients receiving care in an acute-care hospitals IQR program and be able to compare the care that is delivered in the acute-care hospitals with that which is delivered in the PCHs.

Table 3.25.1. MUC2023-220 Brief Summary of Measure Information

CMS MERIT Submission Information MUC2023-220	Description
Measure name	Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (Stratified for Oncology locations)
MUC ID	MUC2023-220
Cascade priority	Safety

CMS MERIT Submission Information MUC2023-220	Description
Measure steward	Centers for Disease Control and Prevention
Measure Developer	Centers for Disease Control and Prevention
Program submitted to	Hospital Inpatient Quality Reporting Program
Committee assigned to	Hospital Committee
Related measures in the program	N/A
Is this a new measure in this year's MUC List?	No
If not a new measure, then describe the history of this measure in prior MUC list inclusion	This measure was submitted as MUC19-18 to the 2019 Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting (PCHQR) program and underwent review by the Hospital Workgroup, leading to a supportive recommendation. The measure was also submitted in 2014 as S0138 to the 2014-Hospital-Acquired Condition Reduction Program, Hospital Inpatient Quality Reporting Program, Hospital Value-Based Purchasing Program, and Medicare Shared Savings Program, and underwent review by the Hospital Committee, leading to a supportive recommendation for all programs.
Is the measure currently used in a CMS program	Hospital Inpatient Quality Reporting Program; Hospital Value-Based Purchasing Program; Hospital-Acquired Condition Reduction Program; Inpatient Rehabilitation Facility Quality Reporting Program; Long-Term Care (LTC) Hospital Quality Reporting Program; Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program
If previously used, please describe the history of the measure in CMS program	Measure used from 2012-2023
Any other program the measure is in use	N/A
Is this measure being proposed to meet a statutory requirement?	No
CBE endorsement status	Endorsed
CBE endorsement number if applicable	CBE 0138
History of endorsement	Year of most recent CDP endorsement: 2019
Path to endorsement	Year of next anticipated CDP endorsement review: 2023
Measure Specification Details	
Measure Description	Annual risk-adjusted standardized infection ratio (SIR) of catheter-associated urinary tract infections (CAUTI) among adults and children hospitalized as inpatients at acute-care hospitals, oncology hospitals, long-term acute-care hospitals, and acute care rehabilitation

CMS MERIT Submission Information MUC2023-220	Description
	hospitals. SIR is reported annually and is calculated by dividing the number of observed CAUTIs by the number of predicted CAUTIs.
Data source	Electronic Health Record; Paper Medical Records
Level of analysis	Facility
Numerator	Number of annually observed catheter-associated urinary tract infections (CAUTI) in hospital inpatients.
Denominator	Number of annually predicted catheter-associated urinary tract infections (CAUTI) in hospital inpatients.
Numerator exclusions	The following are not considered indwelling catheters by NHSN definitions and are excluded from the device days denominator counts: suprapubic catheters, condom catheters, "in and out" catheters, nephrostomy tubes.
Denominator exclusions	The following are not considered indwelling catheters by NHSN definitions and are excluded from the device days denominator counts: suprapubic catheters, condom catheters, "in and out" catheters, nephrostomy tubes.
Denominator exceptions	N/A
Risk adjustment	Yes
Development Status	Fully Developed
If not fully developed, development stage	N/A
Target population	Acute-care hospitals, oncology hospitals, long-term acute-care hospitals, and acute-care rehabilitation hospitals
Measure type	Outcome
Is the measure a composite or component of a composite?	No
Digital Measure Information	
Is this measure an eCQM?	No
If eCQM, what is the Measure Authoring Tool (MAT) number?	N/A
If eCQM, does the measure have a Health Quality Measures Format (HQMF) specification in alignment with the latest HQMF and eCQM standards, and does the measure align with Clinical Quality Language (CQL) and Quality Data Model (QDM)?	N/A

Table 3.25.2. MUC2023-220 Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (Stratified for Oncology locations) Measure Evaluation

MUC2023-220 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Does the measure align with goals and priorities? (*Concept of Interest)*	Approximately, 75% of UTIs that occur in the hospital are associated with a urinary catheter, and approximately 15-25% of patients in the hospital have a urinary catheter.[194] In 2021, 3,774 general acute-care hospitals reported a total of 24,710 CAUTIs to CDC's National Healthcare Safety Network, which signified a 21% decrease in the CAUTI Standardized Infection Ratio (SIR) from national baseline in 2015 to 2021. CAUTIs may be associated with additional complications, extend hospital stays, and increase health care costs (CBE).	--	The study population is the same as the target quality program population.
Conformance: Does the measure as specified align with the conceptual intent? *(Concept of Interest)*	--	No empirical evidence of conformance in the study population.	Unable to determine if persons and entities in the quality program population are included in the specification. Unable to determine if data element reliability and validity extrapolate to the quality program population.
Feasibility: Does the measure's specification and data collection minimize burden? *(Concept of Interest)*	Some data elements are in defined fields in electronic sources.	Some data elements require manual abstraction. No explicit articulation of people, processes, or technology required.	Unable to determine if the people, processes, and technology required for data collection and reporting extrapolate to the quality program population. Unable to determine if the entities in the quality program population have access to people, processes, and technology needed for data collection and reporting.

[194] Centers for Disease Control and Prevention. (2021). Catheter-associated urinary tract infections. https://arpsp.cdc.gov/profile/nhsn/cauti?hospital-select-report=hospital110.

MUC2023-220 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
Importance: Will performance improvement to the benchmark have a significant impact on population outcomes? (*Context of Use)*	The annual 2022 SIR for the oncology locations is 0.811 (SIR Goal=0.25). The HHS reduction goal for 2020 is a 25% reduction goal from the 2015 baseline. The Cumulative Attributable Difference (CAD) in the Oncology data was 400.554, indicating that at least 401 infections would need to be prevented to meet the HAI reduction goal of 25% (SIR Goal = 0.25) (MERIT). Improvement in population health with achievement at the benchmark of care (rate from 0.035% to 0.001%; cases from 1,604 to 492) (CBE).	--	Unable to determine if the benefits of performance improvement to the benchmark have a significant impact on quality program population outcomes.
Reliability: Is measure performance scientifically sound? *(Context of Use)*	Signal to Noise: About 30% of entities have reliability above 0.6.	About 70% of entities have reliability below 0.60.	Some entities have reliability above the threshold (0.60) *within* the quality program population OR a population that can be extrapolated to the program population.
Validity: May providers/facilities/care systems effectively improve on this measure? *(Context of Use)*	Guidelines: III. Proper Techniques for Urinary Catheter Maintenance (evidence-low; certainty-very low or similar; recommendation-USPSTF Grade A, Strong recommendation or similar).[195] Submission includes several recent studies demonstrating the association between CAUTI prevention activities and CAUTI rates.[196, 197]	Empiric validity: Uncertainty about whether the quality construct or unrelated confounders are responsible for the observed association.	Unable to determine if there is an association between the entity and the measure focus in a population that extrapolates to the quality program population. There is no articulation of the way an entity may improve performance on the measure focus within the quality program population.

[195] Gould CV, Umscheid CA, Agarwal RK, Kuntz G, Pegues DA; Healthcare Infection Control Practices Advisory Committee. Guideline for prevention of catheter-associated urinary tract infections 2009. Infect Control Hosp Epidemiol. 2010 Apr;31(4):319-26
[196] Foster, C. B., Ackerman, K., Hupertz, V., Mustin, L., Sanders, J., Sisson, P., & Wenthe, R. E. (2020). Catheter-associated urinary tract infection reduction in a pediatric safety engagement network. Pediatrics, 146(4).
[197] Sampathkumar P, Barth JW, Johnson M, Marosek N, Johnson M, Worden W, Lembke J, Twing H, Buechler T, Dhanorker S, Keigley D, Thompson R. Mayo Clinic Reduces Catheter-Associated Urinary Tract Infections Through a Bundled 6-C Approach. Jt Comm J Qual Patient Saf. 2016 Jun;42(6):25461

MUC2023-220 Criteria/Assertions	Measure Benefits & Evidence Supporting Inclusion	Areas for Additional Consideration	External Validity (suitability for selected quality program and population)
	Empiric validity: A weak but significant positive association was found between facility CLABSI and CAUTI SIRs, rho=0.16 (p-value=0.0121).		
Threats to Validity: If appropriate, is the measure risk adjusted to account for factors outside entity control? *(Context of Use)*	RA model includes: Person factors: patient location Entity factors: medical school affiliation, facility bed size, facility type. Empirical evidence of discrimination (none), calibration (Root mean squared error (RMSE) - 1.60 vs. 1.83 null - lower values are better), or goodness-of-fit (Dispersion-based R2 - 0.48 vs. 0.00 for intercept only - higher values are better).	No explicit rationale for confounders included in the model.	N/A
Usability: Is there opportunity for improvement on this measure in the intended use setting? *(Context of Use)*	Technical advisory group: Healthcare Infection Control Practices Advisory Committee (HICPAC). CDC provides extensive guidance for the prevention of CAUTI.[198] Developers predict only a weak correlation between the CAUTI and CLABSI (MUC2023-219) measures, as some facilities may choose to focus quality improvement on the prevention of a single HAI (CAUTI or CLABSI) due to resource limitations (MERIT).	There is no explicit articulation of the resources and context that might facilitate or be a barrier to the way an entity may improve. In general, populations or entities with limited financial, human, or material resources can hinder the adoption of new practices or technologies (CBE): 1. Evidence-based guidelines and protocols for CLABSI prevention. 2. Financial resources for training, materials, and technology. 3. Personnel, including clinical staff, infection control specialists, and quality improvement teams. 4. Training materials and modules. 5. Data collection and monitoring tools.	There is not an explicit articulation of the resources and context that might facilitate improvement that extrapolates to the quality program population.

[198] Centers for Disease Control and Prevention. Infection Control Guidelines. https://www.cdc.gov/infectioncontrol/guidelines/cauti/index.html

MUC2023-220 Simulated Measure Reliability Tables

The performance score is a ratio of observed (O) to expected (P) events. Expected events are calculated from the risk-adjusted model.

Reliability (signal-to-noise) is calculated by $\frac{\sigma^2_{between}}{\sigma^2_{between}+\sigma^2_{within}}$. $\sigma^2_{between}$ is estimated by the variance of the performance score across the 262 entities. σ^2_{within} or Var(O/P) is estimated by 1/P (O is assumed to follow a Poisson distribution with mean P, so Var(O) = P and Var(O/P) = P/P^2 =1/P. This means that the reliability of each entity is dependent on P, the number of expected events. The measure report indicates a median signal-to-noise reliability of 0.52 across 262 entities.

Simulated decile tables:
Computer simulation was used to create a dataset that closely mirrors the mean, standard deviation, and percentile information provided for the performance score and calculated reliability.

For Table 3.25.3, entities were sorted by performance score, and the average score by decile (estimated from the simulated data) is reported along with the number of entities included in each average. Average, standard deviation, and minimum and maximum scores are also included.

Table 3.25.3. Importance (Decile by performance score)

MUC2023-220	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score (SD)	0.773 (0.773)	0	0	0.085	0.287	0.439	0.585	0.687	0.778	0.912	1.317	2.675	4.725
Entities	262	39	27	26	26	26	26	27	26	26	26	26	1

For Table 3.25.4 entities were sorted by reliability, and the average reliability by decile (estimated from the simulated data) is reported along with the number of entities included in each average, and the average number of expected events. Average, minimum, and maximum reliability and expected events are also included. Note that because reliability is based on P, this is equivalent to sorting entities by the number of expected events.

Table 3.25.4. Reliability (Decile by Denominator-Expected Events, P)

MUC2023-220	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Expected Events, P	2.4	1.0	1.1	1.2	1.3	1.5	1.7	2.0	2.3	2.7	3.8	6.3	10.2
Mean Reliability	0.54	0.38	0.39	0.42	0.45	0.48	0.50	0.54	0.58	0.62	0.69	0.78	0.86
Entities	262	1	27	26	26	26	26	27	26	26	26	26	1

Assumptions:

The information provided for the measure score was based on 435 entities, and the reliability information was based on 262 entities. The 262 entities were simulated based on the mean, standard deviation, and percentile information for the 435 entities.

Interpretation:

The number of expected events, P, is dependent on the patient population (the more patients treated, the higher the expected number of events) and the risk based on patient mix (the higher the risk, the higher the expected number of events). For this measure, the number of expected events determines the reliability of an entity:

The reliability for each entity is $\frac{\sigma^2_{between}}{\sigma^2_{between}+\sigma^2_{within}}$. $\sigma^2_{between}$ is estimated by the between entity standard deviation of the score: $0.773^2 = 0.5975$, and σ^2_{within} is estimated by 1/P. The reliability for each entity is calculated by $\frac{0.5975}{0.5975+\frac{1}{P}}$.

P must be at least 2.5 for a reliability above 0.6. Based on the data provided, about 70% of the entities are likely to have a reliability less than 0.6.

Appendix A. Excerpts from the CMS 2023 Measures Under Consideration List Program-Specific Measure Needs and Priorities

Ambulatory Surgical Center Quality Reporting Program

Program History and Structure:

- The Ambulatory Surgical Center Quality Reporting Program (ASCQR) was established under the authority provided by Section 109(b) of the Medicare Improvements and Extension Act of 2006, Division B, Title I of the Tax Relief and Health Care Act (TRHCA) of 2006.
- The statute provides the authority for requiring Ambulatory Surgical Centers (ASCs) paid under the ASC fee schedule (ASCFS) to report data on services provided in this care setting.
- ASCs may receive a two-percentage point (2%) payment reduction to their ASCFS annual payment update for not meeting program requirements. CMS implemented this program so that payment determinations were effective beginning with the Calendar Year (CY) 2014 payment update.

Current Measure Information:

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	0
Outcome	10
Patient Reported Outcome-Based Performance Measure (PRO-PM)	1
Process	2
Structure	0
Total	**13**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	2*
Equity	0
Safety	5
Affordability and Efficiency	4
Chronic Conditions	0
Wellness and Prevention	2
Seamless Care Coordination	0
Behavioral Health	0
Total	**13**

* ASC 11 is in voluntary reporting until 2025 reporting/CY 2027 payment determination.

Rural Emergency Hospital Quality Reporting Program

Program History and Structure:

- A new quality reporting program for Rural Emergency Hospitals (REHs), a new Medicare provider type, is being implemented by the Centers for Medicare and Medicaid Services (CMS).
- The REH Quality Reporting Program seeks to gather and publicly report information on care provided by these hospitals so that such information is available to inform patient choice for choosing where to obtain care; as well as, toward improving quality and efficiency of care.
- Quality measure information collected through the REHQR Program will be publicly reported.
- Initial program implementation was initiated through rulemaking in the CY 2023 Hospital Outpatient Prospective Payment System (OPPS)/Ambulatory Surgical Center (ASC) Payment System Final Rule.

Hospital Outpatient Quality Reporting Program

Program History and Structure:

- Established by Section 109 of the Tax Relief and Health Care Act (TRHCA) of 2006.
- The program requires subsection (d) hospitals providing outpatient services paid under the Outpatient Prospective Payment System (OPPS) to report on process, structure, outcomes, efficiency, costs of care, and patient experience of care.
- Pay-for-Reporting Program.
- Facilities may receive a two-percentage point (2%) reduction from their annual payment update (APU) under the OPPS for not meeting program requirements.
- Data publicly reported on the CMS *Hospital Compare* website.

Current Measure Information:

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	0
Outcome	3
Patient Reported Outcome-Based Performance Measure (PRO-PM)	2
Process	9
Structure	1
Total	**15**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	4
Equity	0
Safety	1
Affordability and Efficiency	7
Chronic Conditions	1
Wellness and Prevention	2
Seamless Care Coordination	0
Behavioral Health	0
Total	**15**

End-Stage Renal Disease Quality Incentive Program

Program History and Structure:

- The End-Stage Renal Disease quality incentive program (ESRD QIP) is the most recent step in fostering improved patient outcomes by establishing incentives for dialysis facilities to meet or exceed performance standards established by CMS.
- The ESRD QIP is authorized by section 1881(h) of the Social Security Act, which was added by section 153© of Medicare Improvements for Patients and Providers (MIPPA) Act (the Act).
- CMS established the ESRD QIP for Payment Year (PY) 2012, the initial year of the program in which payment reductions were applied, in two rules published in the Federal Register on August 12, 2010, and January 5, 2011 (75 FR 49030 and 76 FR 628, respectively).
- Subsequently, CMS published rules in the Federal Register detailing the ESRD QIP requirements for PY 2013 through FY 2016.
- Most recently, CMS published a rule on November 6, 2014, in the Federal Register (79 FR 66119), providing the ESRD QIP requirements for PY2017 and PY 2018, with the intention of providing an additional year between finalization of the rule and implementation in future rules.
- Section 1881(h) of the Act requires the Secretary to establish an ESRD QIP by:
    - Selecting measures
    - Establishing the performance standards that apply to the individual measures
    - Specifying a performance period with respect to a year
    - Developing a methodology for assessing the total performance of each facility based on the performance standards with respect to the measures for a performance period
    - Applying an appropriate payment reduction to facilities that do not meet or exceed the established Total Performance Score (TPS).

Current Measure Information:

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	4
Outcome	4
Patient Reported Outcome-Based Performance Measure (PRO-PM)	1
Process	5
Structure	1
Total	**15**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	3
Equity	0
Safety	5
Affordability and Efficiency	1
Chronic Conditions	4
Wellness and Prevention	0
Seamless Care Coordination	1
Behavioral Health	1
Total	**15**

Hospital Inpatient Quality Reporting Program

Program History and Structure:

- Established by Section 501(b) of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 and expanded by the Deficit Reduction Act of 2005.
- Hospitals paid under the Inpatient Prospective Payment System (IPPS) are required to report on measures in the program.
- Failure to meet the requirements of the Hospital IQR Program will result in a reduction by 1/4 to a hospital's fiscal year IPPS annual payment update.
- Hospitals that choose to not participate in the program receive a reduction by that same amount.
- Hospitals not included in the Hospital IQR Program, such as critical access hospitals and hospitals located in Puerto Rico and the U.S. Territories, are permitted to participate in voluntary quality reporting.
- Performance of quality measures are publicly reported on the CMS Care Compare website.

Current Measure Information:

Measure Type	Number of Measures
Composite	2
Cost/Resource Use	5

Measure Type	Number of Measures
Intermediate Outcome	0
Outcome	13
Patient Reported Outcome-Based Performance Measure (PRO-PM)	1
Process	13
Structure	2
Total	**36**

Meaningful Measures 2.0 Healthcare Priorities	Number of Measures
Person-centered Care	2
Equity	3
Safety	10
Affordability and Efficiency	11
Chronic Conditions	6
Wellness and Prevention	3
Seamless Care Coordination	0
Behavioral Health	1
Total	**36**

Hospital Value-Based Purchasing Program

Program History and Structure:

- The Hospital Value-Based Purchasing (HVBP) Program was established by Section 3001(a) of the Affordable Care Act, under which value-based incentive payments are made each fiscal year to hospitals meeting performance standards established for a performance period for such fiscal year.
- Measures are eligible for adoption in the Hospital VBP Program based on the statutory requirements, including specification under the Hospital Inpatient Quality Reporting (IQR) Program, and posting dates on the *Care Compare* website.
- The Secretary shall select measures, other than measures of readmissions, for purposes of the Program. In addition, a cost efficiency measure, currently the Medicare Spending Per Beneficiary measure, must be included.

Current Measure Information:

The Hospital VBP Program currently includes 13 measures across four domains. The domains include Safety, Patient and Community Engagement, Clinical and Cost and Efficiency

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	1
Intermediate Outcome	0
Outcome	12
Patient Reported Outcome-Based Performance Measure (PRO-PM)	0
Process	0
Structure	0

Measure Type	Number of Measures
Total	**13**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	1
Equity	0
Safety	7
Affordability and Efficiency	1
Chronic Conditions	4
Wellness and Prevention	0
Seamless Care Coordination	0
Behavioral Health	0
Total	**13**

Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program

Program History and Structure:

- Section 3005 of the Affordable Care Act added subsections (a)(1)(W) and (k) to section 1866 of the Social Security Act.
- Section 1866(k) of the Social Security Act established a quality reporting program for hospitals described in section 1886(d)(1)(B)(v), referred to as a "PPS-Exempt Cancer Hospitals," or PCHs
    - These hospitals are excluded from payment under the inpatient prospective payment system (IPPS)
- PCHQR is a voluntary quality reporting program, in which data will be publicly reported on the Provider Data Catalog website (PDC)
    - If a PCH participates in the program, the facility is required to submit data for selected quality measures to CMS.
    - There are no payment implications for PCHs related to the PCHQR program.

Current Measure Information:

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	2
Outcome	8
Patient Reported Outcome-Based Performance Measure (PRO-PM)	0
Process	5
Structure	1
Total	**16**

Meaningful Measures 2.0 Priority	Number of Measures

Person-centered Care	6
Equity	0
Safety	6
Affordability and Efficiency	0
Chronic Conditions	2
Wellness and Prevention	2
Seamless Care Coordination	0
Behavioral Health	0
Total	**16**

Medicare Shared Savings Program

Program History and Structure:

- The Medicare Shared Savings Program (Shared Savings Program) is Medicare's national value-based payment program for Accountable Care Organizations (ACO). ACO's facilitate coordination and cooperation among health care providers to improve the quality of care for Medicare Fee-For-Service (FFS) beneficiaries and reduce the rate of growth in health care costs.
- Eligible clinicians, hospitals, and other health care providers can voluntarily join or form an ACO.
- ACOs share in savings by meeting the quality performance standard for the performance year and lowering the growth in Medicare spending.
- ACOs participating under a two-sided shared savings/losses model may owe losses if they increase costs and the amount owed is based on quality performance depending on track.
- For performance years 2023 and 2024, ACOs will be required to report quality data via the Alternative Payment Model (APM) Performance Pathway (APP).
    - ACOs can choose to report either the 10 measures under the CMS Web Interface or the 3 eCQMs/Merit-based Incentive Payment System (MIPS) Clinical Quality Measures (CQMs)
    - ACOs must field the Consumer Assessment of Healthcare Providers and Systems Survey (CAHPS) for MIPS survey
    - CMS will calculate 2 claims-based outcome measures using administrative claims data: the Hospital Wide, 30-day, All-Cause Unplanned Readmission (HWR) Rate for MIPS Eligible Clinician Groups measure and the Clinician and Clinician Group Risk-Standardized Hospital Admissions Rates for Patients with Multiple Chronic Conditions measure.
- For performance year 2025 and subsequent performance years, ACOs will be required to report:
    - the 3 eCQMs/MIPS CQMs, field the CAHPS for MIPS survey, and CMS will continue to calculate the 2 claims-based outcome measures noted above.

Current Measure Information:

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	2
Outcome	3
Patient Reported Outcome-Based Performance Measure (PRO-PM)	1
Process	7
Structure	0
Total	**13**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	1
Equity	0
Safety	1
Affordability and Efficiency	1
Chronic Conditions	4
Wellness and Prevention	4
Seamless Care Coordination	0
Behavioral Health	2
Total	**13**

Hospital Readmissions Reduction Program

Program History and Structure:

- The Hospital Readmissions Reduction Program (HRRP) is a Medicare value-based purchasing program established under Section 1886(q) of the Social Security Act.
- Under HRRP, CMS reduces payments to subsection (d) hospitals with excess readmissions.
- The 21st Century Cures Act directs CMS to use a stratified methodology (beginning in FY 2019) to evaluate a hospital's performance relative to other hospitals with a similar proportion of patients who are dually eligible for Medicare and full Medicaid benefits.

  The following steps are taken to calculate payment reductions under HRRP:

  1. For each of the six conditions/procedures, CMS calculates an excess readmission ratio (ERR)
  2. CMS stratifies hospitals into peer groups based on the dual proportion, and calculates median ERRs for each peer group
  3. CMS compares each hospital's performance relative to the peer group median ERR for each measure
  4. CMS calculates the hospital-specific payment reduction. The maximum payment reduction is 3 percent.

Current Measure Information:

HRRP currently includes six condition/procedure-specific claims-based readmission measures.

Measure Type	Number of Measures
Composite	0
Cost/Resource Use	0
Intermediate Outcome	0
Outcome	6
Patient Reported Outcome-Based Performance Measure (PRO-PM)	0
Process	0
Structure	0
Total	**6**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	0
Equity	0
Safety	0
Affordability and Efficiency	6
Chronic Conditions	0
Wellness and Prevention	0
Seamless Care Coordination	0
Behavioral Health	0
Total	**6**

Inpatient Psychiatric Facility Quality Reporting Program

Program History and Structure:

- Sections 3401(f) and 10322(a) of the Affordable Care Act amended section 1886(s)(4) of the Social Security Act to require the Secretary to implement a quality reporting program for inpatient psychiatric hospitals and psychiatric units.
- Applies to all psychiatric hospitals and psychiatric units paid under Medicare's Inpatient Psychiatric Facility Prospective Payment System (IPF PPS).
- IPFQR is a "pay-for-reporting" program.
    - Non-compliance results in a two-percentage point (2%) reduction to the market basket update
        - e.g., an IPF eligible for a 4% update increase would receive a 2% increase if it failed to comply with reporting requirements.
    - Update reductions are noncumulative across payment years.
- Designed to provide patients, and their families and caregivers, with quality-of-care information to help make informed decisions about their health care options.
- Intended to improve the quality of inpatient psychiatric care provided to beneficiaries by ensuring that providers are aware of and reporting on practices related to quality care.

- FY 2014 was the first payment determination.
- Payment reductions for non-participation or failure to submit quality measures are effective as of October 1 of each applicable fiscal year, i.e., for FY 2015, the payment reduction is effective for services provided starting on October 1, 2014.

Current Measure Information:

Measure Type	Number of Measures
Composite	3
Cost/Resource Use	0
Intermediate Outcome	0
Outcome	1
Patient Reported Outcome-Based Performance Measure (PRO-PM)	0
Process	11
Structure	0
Total	**15**

Meaningful Measures 2.0 Priority	Number of Measures
Person-centered Care	0
Equity	0
Safety	2
Affordability and Efficiency	1
Chronic Conditions	0
Wellness and Prevention	3
Seamless Care Coordination	2
Behavioral Health	7
Total	**15**