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TO75FCMC19F0007: Leveraging Quality Measurement to Improve Rural Health

FINAL ENVIRONMENTAL SCAN: RURAL CORE MEASURE SET

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Table of Contents

Executive Summary

An estimated one-fifth of the American population lives in rural areas.[1] Rural residents face unique health challenges related to a mix of risk factors (e.g., higher rates of smoking, high blood pressure, obesity, and environmental exposures), social determinants of health (SDOH) (e.g., higher rates of poverty, lack of insurance, and limited transportation), and healthcare delivery challenges (e.g., geographic isolation, limited staff and infrastructure).[2] Performance measurement in rural areas can help to inform understanding of healthcare gaps, as well as drive quality improvement efforts; however, measurement can be complex in rural areas due to issues such as low case-volume[3] (i.e., when providers do not have enough patients to achieve reliable and valid measurement results).

As part of ongoing rural health work funded by the Centers for Medicare & Medicaid Services (CMS), the National Quality Forum (NQF) convened the Rural Health Advisory Group in 2017-2018 to create a core set of rural-relevant measures—a group of the 20 best-available measures to assess healthcare in rural areas resistant to low case-volume. In 2022, NQF reconvened the Rural Health Advisory Group to discuss potential updates to this set of rural-relevant measures. To inform the Rural Health Advisory Group's discussion, NQF conducted an environmental scan to understand changes in the rural measurement landscape since 2017.

The environmental scan contains measure updates in three categories. First, NQF performed a scan of quality measure repositories and prior NQF reports to understand changes in the specifications of the measures currently included in the rural core set. In addition, NQF also searched measure repositories to identify newly developed measures in topic areas that the Rural Health Advisory Group deemed rural-relevant. Lastly, NQF consulted grey literature and elicited feedback from the Advisory Group to identify topic areas and conditions that are increasing in importance for rural areas; after identifying these areas, NQF created a list of measures that address these topic areas.

In addition to these measure updates, NQF also sampled a group of 25 critical access hospitals (CAHs) to understand rural challenges in reporting on national performance measures. For this randomly selected sample, NQF assessed the percentage of hospitals able to report on quality metrics publicly available through the Medicare Care Compare website. This information was used to cross-check metrics in the current core set, as well as any new measures being considered for addition, for low case-volume challenges.

Overall, highlights from the scan were as follows:

- Within the current core set of 20 measures, 14 measures (70 percent) retained NQF endorsement, 10 measures (50 percent) are currently active in federal quality programs, and six measures (30 percent) were flagged with potential low case-volume challenges based on prior Advisory Group discussion. Based on these criteria, NQF identified a list of 10 measures that the Advisory Group may be interested in discussing further for potential removal.
- A list of 37 measures was identified among newly developed measures in rural-relevant areas previously identified by the Advisory Group. More than half of the measures in this short list were cross-cutting measures, and the most frequently addressed topics included patient handoffs and transitions, patient experiences of care, and readmissions.

- A list of 81 measures was identified among measures in emerging areas for rural measurement. The greatest number of measures were available for infectious disease (33 measures) and population health (31 measures), but measures were also identified related to telehealth, kidney health, and equity/SDOH.
- Two measures that were included in the 2018 rural core set were reviewed as part of the Care Compare sampling; 8 percent of hospitals reported on NQF #0138, suggesting potential low case-volume challenges for this measure. A review of empirical data on reporting rates may be helpful to inform future work related to low case-volume.

The Rural Health Advisory Group will use this information to consider measure additions and removals from the rural core set, as well as to guide further discussion on gap areas and priorities for measure development.

Introduction

The United States (U.S.) Census Bureau has estimated that nearly 60 million Americans, approximately 19 percent of the U.S. population, live in rural (i.e., nonmetropolitan) counties.[1] Compared to Americans who live in nonrural areas, rural residents experience significant health disparities, including higher incidence of chronic conditions; lower life expectancy; increased mortality rates; and higher rates of behavioral health challenges, including depression, suicide, and substance use.[4–7] These disparities are rooted in many issues that are specific to rural areas, including economic, geographic, social, ethnic, racial, and healthcare system-based factors. All of these issues can contribute to limited access to timely medical care.[8] Healthcare system-based factors include fewer healthcare providers (particularly specialists) and hospitals with fewer resources.[9] Systemic issues include long travel times between patients and providers, as well as poor broadband access that limits connectivity and the use of innovative approaches to care delivery, such as telemedicine.[10]

One of the central approaches to improving healthcare quality in the U.S. is measurement. Quality measurement allows providers to compare themselves to peers, and it guides resource allocation for quality improvement activities. In addition, it allows patients to use data to compare providers when making decisions about their care and is used in value-based care for performance evaluation. Quality measurement is a challenge in rural settings for several reasons. Case-volumes in rural areas may be insufficient to reliably measure quality.[11] In addition, patients living in rural areas may be disproportionately impacted by health issues, such as substance use and chronic conditions that may make direct comparison to nonrural settings a challenge.[12,13]

One way in which performance data for rural providers are conveyed is through Medicare's Care Compare website, which is run by CMS. The Hospital Compare tool of Care Compare includes a variety of measures related to the quality of services and experience in hospitals. While some of these measures have sufficient case-volume to present reliable data on CAHs, other measures addressing more specific conditions may not. Similar issues arise for reporting in other rural settings, including the Nursing Homes, Doctors & Clinicians, and Home Health Services sections within the Care Compare site.

NQF has facilitated foundational work addressing quality measurement in rural health over several years. In 2017-2018, the Rural Health Advisory Group released a report that identified a core set of rural-relevant measures.[14] In 2019-2020, the Rural Health Advisory Group identified statistical approaches to address low case-volume in rural-relevant quality measures.[3] In 2020-2021, the Rural Telehealth and Healthcare System Readiness Committee created a measurement framework linking quality of care delivered by telehealth, healthcare system readiness, and health outcomes during disasters and emergencies.[15] In addition, the Rural Health Advisory Group has produced several reports making recommendations about the rural relevance of specific quality measures considered for use in public programs as part of the pre-rulemaking process.[16,17]

The Rural Health Advisory Group was convened on behalf of CMS in 2017-2018 to develop an initial set of guiding principles for selecting rural-relevant measures and to recommend the use of a core set of measures that would allow reliable and valid comparison of performance across most rural (and nonrural) providers.[14] Since 2018, when the first core set of rural-relevant measures was developed, several changes have occurred in healthcare delivery that affect rural settings. This includes the onset of

the coronavirus disease 2019 (COVID-19) pandemic; the broad expansion of telehealth in response to COVID-19; and the creation of a new Medicare rural provider type, the rural emergency hospital.

The purpose of this project is to update the core set of rural-relevant measures originally created by the Rural Health Advisory Group in 2017-2018 so that the included measures remain relevant to the most important issues that rural areas face today. The updated core set will inform key stakeholders about the best measures available for use in a range of rural healthcare settings, promote alignment in the measures used to assess rural healthcare quality, and encourage development of new measures in priority gap areas. The updated core set is not designed to make specific recommendations for measure use in current or future CMS programs.

To begin this process, NQF staff conducted an environmental scan to identify the following items: (1) any recent updates to the existing set of rural-relevant measures, (2) new rural-relevant measures that have been endorsed since 2017-2018, and (3) emerging areas of rural-relevant measurement. The findings from this environmental scan will serve as a foundation for discussion and consideration from the Rural Health Advisory Group tasked with the next iteration of the rural core set.

Approach

Current Core Set Measures

To explore significant changes to measures in the existing rural core set, NQF conducted a review of each measure by cross-referencing NQF's Quality Positioning System™ (QPS), the CMS Measures Inventory Tool (CMIT), final reports from NQF's Consensus Development Process (CDP) portfolio, meeting summaries and final recommendations from NQF's Measure Applications Partnership (MAP) portfolio, and the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS). These resources informed updates to NQF endorsement status or measure specifications and use in federal programs and identified the topic area of each measure.

NQF staff examined prior work done by the Rural Health Advisory Group to identify measures or conditions likely to meet low case-volume challenges and to identify other key considerations for measurement in rural areas. Resources for this review include meeting summaries and final recommendations from NQF's MAP portfolio and two prior reports published by the Rural Health Advisory Group: *Addressing Low Case-Volume in Healthcare Performance Measurement of Rural Providers* (2019) and *Rural-Relevant Quality Measures for Testing of Statistical Approaches to Address Low Case-Volume* (2020). Results from the Hospital Compare sampling, described elsewhere in this report, provided additional insights on measures that may face low case-volume challenges when reported by rural hospitals.

New Rural-Relevant Measures

To identify newly available measures in rural-relevant condition areas previously specified by the Rural Health Advisory Group, NQF performed a scan of measures newly endorsed since the creation of the original rural core set. In February 2022, NQF exported a list of all measures currently endorsed by NQF from the QPS tool and narrowed this list to measures with an initial endorsement date of May 16, 2018, or later, corresponding with the fall 2017 review cycle.

NQF reviewed each of the newly endorsed measures and tagged them for relevance to the following rural-relevant topic areas: Cross-Cutting, Behavioral/Mental Health, Substance Abuse, Medication Management, Diabetes, Hypertension, Chronic Obstructive Pulmonary Disease, Readmissions, Perinatal, Pediatrics, Advance Directives/End of Life, Patient Handoffs and Transitions, Access to Care, Vaccinations/Immunizations, Cancer Screenings, Pneumonia, Heart Failure, Acute Myocardial Infarction, Stroke, Venous Thromboembolism, Healthcare-Associated Infections (HAIs), Patient Experiences of Care, Emergency Department (ED) Use, Surgical Care, Asthma, and Obesity. These areas were identified during the original creation of the core set (2017-2018) and in subsequent work to identify rural-relevant measures with low case-volume challenges (2019-2020); they were also reaffirmed as important topic areas for rural measurement by the Rural Health Advisory Group during a web meeting in January 2022.

For measures tagged with at least one rural-relevant condition or topic area, the following measure characteristics were recorded in a spreadsheet directly from the exported QPS file: NQF ID Number, Measure Name, Endorsement Status, Steward, Measure Description, Numerator Statement, Denominator Statement, Exclusions, Care Setting, Level of Analysis, Measure Type, Data Source, and Risk Adjustment/Stratification. Measures were also recorded as having an electronic clinical quality measure (eCQM) specification available if they were endorsed in an eMeasure format.

In addition to this information available from the QPS, NQF also recorded the following information from the CMIT where available as of February 2022: CMIT ID number, availability of an eCQM specification, and current use in federal programs.

Lastly, each measure was reviewed by NQF staff with expertise in rural measurement. Measures identified as likely to face low case-volume challenges were tagged and excluded from the short list of newly available measures for the Rural Health Advisory Group's consideration. Measures that did not address any rural-relevant topics or were outside the clinician, facility, or population level of analysis were also excluded from further consideration.

Emerging Areas for Measurement

In addition to identifying changes to the current rural core set and newly available measures in previously identified rural-relevant topic areas, NQF also identified emerging areas in which quality measurement is important in rural areas. NQF identified these areas based on a review of public health statistics and grey literature related to healthcare in rural areas. NQF also elicited feedback from the Rural Health Advisory Group during the first web meeting in January 2022 to identify potential topic areas that should be considered for measurement.

Sources largely supported the continued importance of topic areas already represented in the rural core set. For example, 2019 data from the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics demonstrated worse outcomes for rural populations across the board for the top 10 death rates in the U.S., including heart disease, cancer, chronic lower respiratory disease, stroke, diabetes, influenza and pneumonia, and suicide. CDC data also supported the continued inclusion of heart disease, cancer, and respiratory disease measures, in which the disparity in death rates between rural and urban areas continues to grow.[18] Survey data from Rural Healthy People 2020 also reiterated the continued importance of access to care, nutrition and weight status, diabetes, mental health and substance abuse, heart disease, etc.[19] Multiple sources spotlighted the importance of access to obstetric

services[20,21]; mental health services to address rising suicide rates,[20,22] especially in populations such as farmers[23]; and services to respond to the ongoing opioid epidemic.[20,22,24]

In addition to reiterating the importance of these existing topic areas, sources identified the following new areas for measurement. Leveraging technology to improve access to care in rural areas is an opportunity for improvement and a priority for the Department of Health and Human Services (HHS)[20,21]; social services, such as nonemergency transportation, are also a lever for improving rural residents' access to care.[21] Infectious diseases, such as COVID-19 and the human immunodeficiency virus (HIV) epidemic, were also noted as current issues.[20,25] A review of the top causes of death in the U.S. also flagged Alzheimer's disease, kidney disease, and injuries (both intentional and unintentional) as important areas for measurement.[18,20,22]

The Rural Health Advisory Group also provided feedback on emerging areas for measurement during the first web meeting and affirmed the importance of infectious disease measures (including COVID-19 and sexually transmitted infections), measures addressing increased use of mobile technologies and telehealth, measures related to equity and access to nonclinical services, measures addressing emergency care in rural areas, and measures for inter-facility transfers and care coordination. Advisory Group members also suggested that population or community health measures would be a helpful supplement to the core set.

After identifying these emerging areas, relevant measures were pulled from the following sources. After removing duplicates, a total of 137 unique measures were identified in the following categories:

- Twenty-six measures were identified from Appendix B of the 2021 Rural Telehealth and Healthcare System Readiness Measurement Framework Final Report. These measures were originally identified by the Rural Telehealth and Healthcare System Readiness Committee as measures potentially helpful for understanding the quality of care related to telehealth use in rural areas during emergencies; they address a mix of cross-cutting and condition-specific topics.
- Four measures were identified related to equity and SDOH. While a search of the QPS with equity-related search terms (i.e., "equity," "social determinants," "cultural competence," "language," "transportation," "housing," and "food") did not flag any newly available NQF-endorsed measures related to equity, NQF did identify three equity-related measures previously discussed as part of MAP deliberations in 2021-2022, as well as a transportation measure previously identified during the Rural Telehealth Committee's work.
- Fifty-five measures were identified related to infectious disease. Forty-nine measures were pulled from Appendix B of the 2017 NQF-Endorsed Measures for Infectious Disease Report, representing the full portfolio of NQF-endorsed measures related to infectious disease. NQF also identified six newly developed COVID-19 measures from past MAP deliberations (2020-2021) and NQF's Measure Information Management System (MIMS).
- Six measures were identified related to kidney health based on a search of the QPS for endorsed measures (keyword: "kidney").
- Four measures were identified related to dementia based on a search of the QPS for endorsed measures (keywords: "Alzheimer's," "dementia").
- No measures were identified specific to intentional injury (i.e., violence) and unintentional injury; measures identified in a search of the QPS were related to patient safety and injuries within hospitals. These areas are not represented in the measure scan.

- Forty-nine population and community health measures were identified based on a search of the QPS for all measures endorsed at the population level.

For each of the identified measures, the following characteristics were recorded in a spreadsheet: NQF ID Number, Measure Name, Endorsement Status, Steward, Measure Description, Numerator Statement, Denominator Statement, Exclusions, Care Setting, Level of Analysis, Measure Type, Data Source, and Risk Adjustment/Stratification. All of these were pulled from the QPS for NQF-endorsed measures; for measures without endorsement, this information was pulled from the CMIT. Measures were recorded as having an eCQM available if they were endorsed in an eMeasure format or if the CMIT indicated an eCQM specification was available. In addition to these characteristics, CMIT ID number and current use in federal programs were recorded from the CMIT. For areas in which any information was not available, fields were marked with "Not available" or "N/A."

Lastly, each measure was reviewed by NQF staff with expertise in rural measurement. Measures identified as likely to face low case-volume challenges were tagged and excluded from the list of measures in emerging areas for the Rural Health Advisory Group's consideration. Measures already discussed for inclusion in the core set during 2017-2018; measures already represented in the scan of newly endorsed measures since 2018; measures outside the clinician, facility, or population level of analysis or with no level of analysis information available; and measures with no publicly available specifications were also excluded from further discussion.

Hospital Compare

In order to understand the metrics currently used in public reporting, which may pose challenges for rural providers, NQF assessed the percentage of CAHs that were able to publicly report on quality measures on the Hospital Compare tool on https://www.medicare.gov/care-compare/. CAHs were selected because they are representative of rural challenges due to geographic isolation and limited capacity.

The goal of the process was to assess whether CAHs were able to report on national performance measures to empirically test the "low case-volume" challenge assumption in existing core set measures for a commonly used Medicare Compare website. To find a representative sample of hospitals of either high reporting (which NQF determined to be an 80 percent reporting rate or more) or low reporting (i.e., a 20 percent reporting rate or less), NQF performed a sample size calculation. It estimated a minimum sample size of n=25 to achieve 90 percent power for this study, based on an assumption of a baseline of 50 percent reporting for each measure across all U.S. hospitals (α=0.05, β=0.1). Based on this calculation, a random sample of 25 CAHs was selected from a sampling frame of 1,356 CAHs[26] identified by the Flex Monitoring Team, a consortium of researchers evaluating the Medicare Rural Hospital Flexibility Grant Program; the final sample included CAHs from 17 states in the contiguous U.S.

For each of the selected CAHs, NQF reviewed quality information publicly available on https://www.medicare.gov/care-compare/ as of February 2022. NQF recorded whether each hospital was able to report on the following quality topics (i.e., metric included a percentage or rating instead of being marked as "not available" or "not applicable"):

- 14 metrics related to Timely & Effective Care
- 15 metrics related to Complications & Deaths

- 14 metrics related to Unplanned Hospital Visits
- 19 metrics related to Psychiatric Unit Services
- Five metrics related to Payment and Value of Care

This information was used to calculate the percentage of hospitals in the sample that reported on each Care Compare metric. Note that Care Compare reporting is voluntary; therefore, hospitals may choose not to report on certain metrics and may be unable to report on metrics for reasons such as lack of claims data or low case-volume. After reviewing the distribution of the data on percent reporting, NQF cross-referenced measures with less than 40 percent reporting rates with the measures in the current core set to identify whether any measures have potential low case-volume challenges. After the list of new measures being considered for addition has been narrowed further, NQF will also cross-reference these measures against the Care Compare metrics to identify measures that should not be considered for the updated rural core set based on potential low case-volume challenges.

The specific metrics assessed for each hospital, as well as the percentage of hospitals reporting on each metric, are included in Appendix E.

Findings

Current Core Set Measures

In 2018, the Rural Health Advisory Group identified a list of required and preferred characteristics for measures to be included in the core set. The 20 measures in the final list were NQF-endorsed, cross-cutting, and resistant to low case-volume challenges, and they addressed the quality and coordination of transitions of care. The measures also represented rural-relevant conditions ranging from behavioral health to chronic illnesses and medical events that may be particularly challenging or common in rural settings.

During the Rural Health Advisory Group's first convening, members revisited these characteristics and their continued utility as inclusion criteria. No criteria were removed; however, Advisory Group members discussed the potential for added flexibility regarding NQF endorsement. The Advisory Group agreed that while endorsement status should still play a key role in refining measures, it should not be a strict requirement, particularly for emerging areas in which NQF-endorsed measures may not be available. Following this input, NQF staff reviewed the existing measure set to identify changes in NQF endorsement status, measure specifications, use in federal programs, and any concerns related to low case-volume challenges. The results of these findings are described below and can be reviewed in detail in Appendix B.

NQF Endorsement and Measure Specifications

Of the 20 original NQF-endorsed measures, 14 (70 percent) have retained their endorsement status since the release of the 2018 report. The 2018 report included an additional seven measures that received support from the Rural Health Advisory Group for their relevance to care in rural communities but were excluded from the final core set due to level of analysis.[14] All of these measures remain endorsed.

Seven of the 14 endorsed core set measures will be reviewed again during the spring and fall 2022 CDP cycles, including NQF #1717 *National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital*

Onset Clostridium difficile Infection (CDI) Outcome Measure, which has received significant updates to the measure specifications.[27] These updates expand the measure numerator to only include cases in which there is a positive test ***and*** subsequent application of antimicrobial agents or other therapies.

NQF #0059 *Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%)* was included in a suite of HEDIS measures updated to support the increased use of telehealth during the COVID-19 pandemic.[28]

Six measures from the original rural core set have lost endorsement since the 2018 report. These measures are listed in Table 1 along with the rationale for endorsement removal.

Table 1. Core Set Measures – Lost Endorsement

National Quality Forum (NQF) ID	Measure Title	Rationale for Endorsement Removal
0202	Falls With Injury	Failure to pass scientific acceptability based on validity concerns
0291	Emergency Transfer Communication Measure	Failure to pass scientific acceptability based on reliability concerns; resources were unavailable to conduct the additional testing/requirements for endorsement maintenance
0371	Venous Thromboembolism Prophylaxis	Measure withdrawn
1661	SUB-1 Alcohol Use Screening	Measure withdrawn by the developer to be redesigned as an electronic clinical quality measure (eCQM)
0418	Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan	The measure steward decided to discontinue the endorsement process; however, the measure is still being maintained.
0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	The measure steward decided to discontinue the endorsement process; however, the measure is still being maintained.

Use in Federal Programs

The 2018 Rural Health Advisory Group included use in federal payment and reporting programs as a qualitative consideration for measures in the rural core set. The Advisory Group noted that this consideration could promote alignment in measures across various programs. Since 2017, five of the measures have been submitted to the MAP initiative for review and recommendations:

- NQF #0138 National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure
- NQF #0471 PC-02 Cesarean Birth

- NQF #1717 National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* Infection (CDI) Outcome Measure
- NQF #1789 Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)
- NQF #0729 Optimal Diabetes Care

MAP recommended support or conditional support for all of the measures to their respective programs.

In total, 11 measures (55 percent) of the existing core set remain active in federal quality programs, while nine are currently inactive or have been removed from federal programs. Eleven measures are currently used in the Health Resources and Services Administration's (HRSA) programs.[29,30] Six of these measures are currently active in the Medicare Beneficiary Quality Improvement Project:

- NQF #0138 National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure
- NQF #0166 Hospital Consumer Assessment of Providers and Systems (HCAHPS)
- NQF #0202 Falls With Injury
- NQF #0291 Emergency Transfer Communication Measure
- NQF #0371 Venous Thromboembolism Prophylaxis
- NQF #1717 National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* (CDI) Outcome Measure

Additionally, NQF #1789 (unplanned readmissions), NQF #0028 (tobacco use), NQF #0059 (hemoglobin A1c poor control), NQF #0418 (clinical depression), and NQF #0421 (body mass index [BMI]) are used in the HRSA Health Center Program and/or Community Grant Program.

Active measures are listed with their programs in Table 2 as presented on the CMIT website in February 2022.

Table 2. Core Set Measures – Active in Federal Programs

National Quality Forum (NQF) ID	Measure Title	Federal Programs – Active Status
0138	National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure	Hospital-Acquired Condition Reduction Program (HACRP), Hospital Compare, Inpatient Rehabilitation Facility Compare, Inpatient Psychiatric Facility Quality Reporting (IPQFR), Long-Term Care Hospital Compare, Long-Term Care Hospital (LTCH) Quality Reporting Program (QRP), Prospective-Payment System Exempt Cancer Hospital Quality Reporting (PCHQR)
0166	Hospital Consumer Assessment of Providers and Systems (HCAHPS) [Note: includes 11 performance measures under this NQF number]	Hospital Compare, Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (HVBP)

National Quality Forum (NQF) ID	Measure Title	Federal Programs – Active Status
1717	National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* Infection (CDI) Outcome Measure	HACRP, Hospital Compare, Inpatient Rehabilitation Facility Compare, Inpatient Rehabilitation Facility (IRF) QRP, Long-Term Hospital Compare, LTCH QRP
0005	CAHPS Clinician & Group Surveys (CG-CAHPS)-Adult, Child [Note: includes four adult and six child measures under this NQF number]	Merit-Based Incentive Payment System (MIPS), Physician Compare
0041	Preventive Care and Screening: Influenza Immunization	Medicare Shared Savings Program (MSSP), MIPS
0059	Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%)	Medicare Part C Star Rating
0097	Medication Reconciliation Post-Discharge	Healthcare Effectiveness Data and Information Set (HEDIS) Quality Measure Rating System, Medicare Part C Star Rating, Physician Compare
0326	Advance Care Plan	HEDIS Quality Measure Rating System
0418	Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan	MSSP, MIPS, Physician Compare
2152	Preventive Care and Screening: Unhealthy Alcohol Use: Screening & Brief Counseling	MIPS, Physician Compare

Low Case-Volume Challenges

Small populations in rural areas can lead to low sample sizes of eligible patients for inclusion in quality measurement initiatives, thus undermining the reliability and validity of quality measures.[16] During the development of the existing rural core set of measures, the Rural Health Advisory Group selected measures that were perceived to be more resistant to low case-volume challenges. During public commenting on the final report, dissenting comments were shared on six measures in the core set, indicating that they were not resistant.[14] These measures included the following:

- NQF #0138 National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure
- NQF #0166 Hospital Consumer Assessment of Providers and Systems (HCAHPS) [Note: includes 11 performance measures under this NQF number]
- NQF #0371 Venous Thromboembolism Prophylaxis
- NQF #0471 PC-02 Cesarean Birth
- NQF #1789 Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)
- NQF #1717 National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* Infection (CDI) Outcome Measure

The Rural Health Technical Expert Panel (TEP) and the Rural Health Advisory Group conducted further work in 2018-2019 to identify promising statistical approaches that could resolve low case-volume challenges and develop a set of high-priority, rural-relevant measures at risk for low case-volume that could be used to test the innovative approaches. In the 2020 final report titled *Rural-Relevant Quality Measures for Testing of Statistical Approaches to Address Low Case-Volume*, Rural Health Advisory Group members selected a final list of 15 measures susceptible to low case-volume to recommend for testing. All six measures identified above were included in the list. The Advisory Group's rationales for measure inclusion can be reviewed in the full report.

Two of these measures, NQF #0138 and NQF #1717, are active in Hospital Compare. NQF randomly sampled the reporting results for 25 CAHs through the Care Compare website and found that of those facilities, only two reported on NQF #0138 (8 percent), and 11 facilities reported on NQF #1717 (44 percent). These findings indicate that NQF #0138 may pose greater challenges for reporting done by CAHs.

Considerations for Measure Removal

Taking into consideration updates to the core set measures described above, NQF staff developed a list of measures for the Rural Health Advisory Group to revisit and consider for potential removal. Characteristics of measures for consideration include the following:

- Loss of endorsement ***and*** lack of use in federal programs
- Prior identification of potential low case-volume challenges

Ten measures (50 percent) met one or both of these criteria (see Table 3). Inclusion in this list does not indicate that a measure must be removed from the core set and should instead be seen as a starting point for deliberations on the continued utility of each measure to rural settings and ideal alignment with federal programs.

Table 3. Core Set Measures – Measures for Potential Removal

National Quality Forum (NQF) ID	Measure Title	Endorsement Status	Active Use in Federal Programs	Identified Potential for Low Case-Volume
0202	Falls With Injury	Endorsement Removed	No	No
0291	Emergency Transfer Communication Measure	Endorsement Removed	No	No
0371	Venous Thromboembolism Prophylaxis	Endorsement Removed	No	Yes
1661	SUB-1 Alcohol Use Screening	Endorsement Removed	No	No
0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	Endorsement Removed	No	No

National Quality Forum (NQF) ID	Measure Title	Endorsement Status	Active Use in Federal Programs	Identified Potential for Low Case-Volume
0138	National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure	Endorsed	Yes	Yes
0166	Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)	Endorsed	Yes	Yes
0471	PC-02 Cesarean Birth	Endorsed	No	Yes
1789	Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)	Endorsed	No	Yes
1717	National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* Infection (CDI) Outcome Measure	Endorsed	Yes	Yes

New Rural-Relevant Measures

In total, 71 measures were newly endorsed by NQF in 2018 or later. NQF excluded measures that did not address any of the priority rural-relevant topics previously identified by the Rural Health Advisory Group (n=5); measures outside the clinician, facility, or population level of analysis (n=12); and measures likely to face low case-volume challenges based on a review conducted by NQF staff (n=17). After excluding these 34 measures from further consideration, a total of 37 candidate measures remained in this portion of the environmental scan.

Fifty-four percent of the measures were cross-cutting measures, which the Rural Health Advisory Group previously defined as measures "neutral with respect to condition or type of procedure or service"[14]; because these measures can address a heterogeneous mix of rural providers and residents, low case-volume challenges are less likely to occur with these measures. The most frequently addressed rural-relevant topics were patient handoffs and transitions (22 percent), patient experiences of care (22 percent), readmissions (16 percent), substance abuse (14 percent), medication management (14 percent), and access to care (14 percent). (Note: Twenty-three measures were tagged with multiple rural-relevant categories; therefore, the categories in Table 4 sum to more than 37.)

Table 4. Rural-Relevant Topic Areas Addressed by Newly Endorsed Measures Considered for the Updated Core Set (N=37)

Condition/Topic Area	n (%)
Cross-Cutting	20 (54%)
Patient Handoffs and Transitions	8 (22%)

Condition/Topic Area	n (%)
Patient Experiences of Care	8 (22%)
Readmissions	6 (16%)
Substance Abuse	5 (14%)
Medication Management	5 (14%)
Access to Care	5 (14%)
Mental Health	3 (8%)
Emergency Department (ED) Use	3 (8%)
Pneumonia	2 (5%)
Surgical Care	2 (5%)
Diabetes	1 (3%)
Hypertension	1 (3%)
Chronic Obstructive Pulmonary Disease	1 (3%)
Pediatrics	1 (3%)
Cancer Screenings	1 (3%)
Heart Failure	1 (3%)
Asthma	1 (3%)
Perinatal	0 (0%)
Advance Directives/End of Life	0 (0%)
Vaccinations/Immunizations	0 (0%)
Acute Myocardial Infarction	0 (0%)
Stroke	0 (0%)
Venous Thromboembolism	0 (0%)
Healthcare-Associated Infections (HAIs)	0 (0%)
Obesity	0 (0%)

The measures represented a mix of types, including process measures (n=13, 35 percent), outcome measures (n=18, 49 percent), cost and resource measures (n=4, 11 percent), and composite measures (n=2, 5 percent). Of the outcome measures, five were patient-reported outcome performance measures (PRO-PMs).

Sixteen measures (43 percent) were endorsed at the clinician level of analysis, including nine measures at the individual-clinician level and seven measures at the group/practice level. Twenty-one measures (57 percent) were endorsed at the facility level of analysis. Seven measures (19 percent) were endorsed at the population level of analysis. (Note: Seven measures were endorsed at multiple levels of analysis.)

Most measures addressed the outpatient or inpatient hospital settings. Fifteen measures (41 percent) addressed outpatient services, and 12 measures (32 percent) addressed inpatient/hospital services. However, additional care settings were represented in the identified measures, including ED and services (four measures, 11 percent); post-acute care (seven measures, 19 percent); home care (four measures, 11 percent); and other settings (nine measures, 24 percent). Seven measures were specified for use in multiple care settings, while one cost measure (NQF #3575 *Total per Capita Cost*) did not have a care setting designated.

A full list of the newly endorsed measures since 2018, including tags for rural-relevant conditions and notes on considerations such as low case-volume challenges, is included in Appendix C.

Emerging Areas for Measurement

Through literature review and discussion with the Rural Health Advisory Group, NQF staff identified the following topics as important emerging areas for measurement in rural areas:

- Measures that can be used to understand quality of care related to telehealth use
- Equity, including SDOH and access to social services
- Infectious diseases, including COVID-19
- Population- or community-level health measures

During the discussion, Advisory Group members also reiterated the importance of measures related to access to care, inter-facility transfers and care coordination, and emergency care in rural areas. Since the Rural Health Advisory Group previously identified these areas as rural-relevant, these topic areas are represented above in the *New Rural-Relevant Measures* section instead of in this section of the environmental scan.

In total, 137 measures were identified in these emerging areas for measurement. After identifying these 137 measures, measures in the following categories were excluded: measures that were already included in the original core set (n=8); measures already represented during the scan of newly endorsed measures since 2018 (n=9); measures previously considered for the core set but rejected following Advisory Group discussion (n=10); measures outside the clinician, facility, or population level of analysis or measures in which the level of analysis was unavailable (n=22); measures likely to face low case-volume challenges based on NQF staff's review (n=10); and measures in which specifications were no longer publicly available (n=1). After removing these measures, a total of 81 candidate measures remained in this portion of the environmental scan.

Among the 81 measures, the emerging areas with the greatest number of measures available were infectious disease (n=33, 41 percent) and population health measures (n=31, 38 percent). Eight measures were identified that could potentially address telehealth (n=8, 10 percent). Five measures were identified in kidney health (6 percent). Lastly, four measures related to equity and SDOH were identified (5 percent). (Note: Two measures addressed multiple emerging areas for measurement.)

Most of the measures identified in emerging areas for measurement are currently NQF-endorsed, including fully endorsed measures, measures endorsed for trial use, and measures endorsed with reserve status (n=60, 74 percent). The pool of measures also included eight measures that have had NQF endorsement removed (10 percent) and 13 measures that are not NQF-endorsed (16 percent).

Two-thirds of the identified measures were process measures (n=54, 67 percent). The remaining measures included 24 outcome measures (30 percent), including three PRO-PMs, two structure measures (2 percent), and one composite measure (1 percent).

One-third of the measures were endorsed at the clinician level of analysis (n=27, 33 percent); 19 of these measures (23 percent) were endorsed at the individual-clinician level, while 25 measures (31 percent) were endorsed at the group/practice level. Forty-three measures (53 percent) were endorsed

at the facility level of analysis, six measures (7 percent) were endorsed at the integrated delivery system level, and 42 measures (52 percent) were endorsed at the population level of analysis. (Note: Fifty-three measures were endorsed at multiple levels of analysis.)

Lastly, most measures identified in the emerging areas were in the outpatient, inpatient, or post-acute care/long-term care settings. Thirty-five measures (43 percent) addressed outpatient services, 33 measures (41 percent) addressed inpatient services, and 20 measures (25 percent) addressed post-acute care and long-term care. In addition, nine measures (11 percent) addressed home care, and 31 measures (38 percent) addressed other care settings. (Note: Twenty-five measures were relevant to multiple care settings.)

A full list of the measures identified in emerging areas is included in Appendix D.

Discussion

This environmental scan identified several key potential updates to the 2018 rural core set, thus underscoring the importance of frequent periodic review as quality measurement and priorities evolve. Of the 20 core set measures, the majority (70 percent) retained NQF endorsement, and almost half (45 percent) are used in public programs. The latter subset of measures included many general, cross-cutting measures related to topics that are relevant to both rural and nonrural settings, including HAIs, patient experience, immunization, medication reconciliation, diabetes, and screening for unhealthy alcohol use and depression.

Measures were selected for the 2018 rural core set based on perceived resistance to low case-volume challenges. However, when NQF assessed a small sample of rural hospitals during this environmental scan, NQF #0138 (i.e., the catheter-associated urinary tract infection [CAUTI] measure), which was included in the 2018 core set, was largely not reportable. This may have been due to low case-volume or other challenges faced by rural providers. CAUTI rates have improved over the last decade from interventions such as reducing the use of short-term catheters; nurse-driven protocols to remove catheters; and sterile placement, which could drive a drop in case-volume.[30,31] In rural hospitals, quality improvement activities may be further driving low case-volume for measures with rarer outcomes. Lastly, the 2017-2018 Rural Health Advisory Group assessed low case-volume qualitatively and may have underestimated the measure's susceptibility to low case-volume without quantitative evidence.

By comparison, in another measure of hospital infection (*C. difficile*), rates were reported by almost half (44 percent) of the sample. While measures addressing specific conditions may not be amenable to reporting in many rural settings due to small denominators, these results suggest that the Advisory Group should discuss condition-specific measures of interest on a case-by-case basis.

NQF staff also identified several measures for the Rural Health Advisory Group to consider for removal. These included measures that have either lost endorsement and are inactive in government programs or were identified in the scan or prior work from the Advisory Group as being at risk for low case-volume. During the third web meeting, the Rural Health Advisory Group considered whether to replace some of these measures with either newly endorsed or emerging measures that may be better suited for inclusion in the core set; the final additions and rationale will be summarized in the Final Recommendations Report.

The environmental scan identified 37 potentially rural-relevant measures that have been endorsed since 2018, as well as a large number of emerging measures. The Rural Health Advisory Group expressed a desire to balance core set characteristics, settings, and conditions during the first web meeting for this work.[32] The newly endorsed measures were most commonly cross-cutting, including measures of hospitalization rates, cost, mortality, and patient-reported outcomes. Some of the measures addressing more specific populations (e.g., evaluation of cognitive function in home-based primary care) may ultimately suffer from low case-volumes. Notably, there were rural-relevant areas (e.g., perinatal, advance directives/end of life) with no newly endorsed measures that met NQF's criteria. During the third web meeting, the Rural Health Advisory Group used criteria determined during the first web meeting to guide the selection of new measures to fill gaps in the core set. This involved the inclusion of measures without NQF endorsement, in contrast to the Advisory Group's approach during the original creation of the core set.

Emerging areas for potential inclusion include telehealth, equity, infectious disease, population health, dementia, and kidney health. After the exclusions were made, 81 measures in emerging areas were identified for Rural Health Advisory Group consideration. The most common areas were infectious disease (41 percent) and population health (38 percent). Infectious disease measures covered a variety of areas, including HIV, sexually transmitted infection, vaccination, sepsis, antibiotic stewardship, and surgical site infections. Notably, several COVID-19 vaccination measures were identified. This pace of measure development reflects the evolving nature of quality measurement during a pandemic. Population health measures covered a broad variety of topics and included several condition-specific measures in rural-relevant topics (e.g., opioids, mental health, and chronic conditions). Measures in emerging areas, which are narrowly focused on specific conditions or aspects of care, may ultimately be excluded due to concerns regarding low case-volume. For example, the measure titled *Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure* may not be reportable by small rural hospitals.

Between the newly identified measures in rural-relevant areas as well as in emerging areas, a total of 118 measures were identified for further consideration. Between the second and third web meetings, NQF used a weighted scoring approach to narrow down the list of measures for additional discussion within priority topic areas. As part of this approach, NQF collected input from the Rural Health Advisory Group on the relative importance of several measure attributes (e.g., NQF endorsement status; cross-cutting status; outcome or PRO-PM measure type; and active status in federal programs), asking group members to assign each attribute a rating on a five-point scale (ranging from "not important" to "very important"). The average rating for each of these measures was used to determine a weighting scale and generate weighted scores for each new measure identified in the scan, in which measures that have more desirable attributes obtain a higher score. NQF also sought input from the Rural Health Advisory Group on the most important condition areas to be added to the rural core set, including both specific clinical care areas (e.g., asthma, diabetes, and cancer) and cross-cutting topics (e.g., access to care, patient experiences, and population health measures). Based on these responses, NQF developed a prioritized short list of measures; after refining the short list based on suggestions from the Advisory Group and federal liaisons, these measures were discussed in further detail during the third web meeting in April 2022. The specific weighting, priority topic areas, discussion, and final decisions of the Advisory Group will be reflected in the Final Recommendations Report.

There are several limitations to this environmental scan. First, NQF staff only assessed measures that had been endorsed since 2018 and did not assess measures that were previously reviewed and excluded

by the Rural Health Advisory Group in 2017-2018. This process could potentially exclude older measures that may now be relevant. This scan also limited the level of analysis for newly endorsed measures to clinician, facility, and population levels based on the intent of the core set. NQF staff also referenced Care Compare data to identify measures with potential low case-volume challenges; however, Care Compare reporting is voluntary, and hospitals can also elect not to report on a measure even if they have sufficient volume for reporting. NQF staff performed additional assessments of low case-volume susceptibility based on qualitative input from prior Advisory Group reports and a high-level review of the measure specifications rather than quantitative analysis. In future activities in which the Advisory Group evaluates measures for potential use in rural areas, it may be useful to reference objective assessments for low case-volume if data are available.

Conclusion

Through this environmental scan, NQF staff identified several measures in the 2018 rural core set that remain relevant to rural settings, do not suffer from low case-volume concerns, and are reported in government programs. Yet the Rural Health Advisory Group identified 50 percent of the core set measures for reassessment, thus underscoring the importance of periodic review of recommended measures. NQF staff identified a substantial number of both newly endorsed measures and measures in emerging areas that are rural-relevant. Given the volume of measures to review, NQF staff sought input from the Rural Health Advisory Group to identify an appropriate methodology to create a short list of measures for potential addition to the rural core set. An empirical approach may be a helpful supplement to assess low case-volume issues in future work. This environmental scan will inform further Rural Health Advisory Group discussions and recommendations for a refined core set of rural-relevant measures, which will be published in a final report in August 2022.

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Appendices

Appendix A: Advisory Group Members, Federal Liaisons, and NQF Staff

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Appendix B: 2018 Core Set

Included in Excel Tab 2.

Appendix C: Potential Additions

Included in Excel Tab 3.

Appendix D: Emerging Areas

Included in Excel Tab 4.

Appendix E: Hospital Compare

Included in Excel Tab 5.

Appendix F: Public Comments and Responses

The Draft Environmental Scan was posted on the project webpage for public and National Quality Forum (NQF) member comment from March 21, 2022, through April 11, 2022. During the commenting period, NQF received 15 comments from seven organizations. Comments were elicited through the public commenting tool and additional organizational outreach. The comments below are grouped by theme: Current Core Set Measures, Newly Endorsed Rural-Relevant Measures, Emerging Areas for Rural Measures, and Additional Comments. The Advisory Group discussed these comments during its web meeting on April 29, 2022, and responses are included under each comment.

Current Core Set Measures

Rob Adsit

COMMENT

Smoking and tobacco use continue to be the leading cause of preventable disease and death in the United States. Smoking and tobacco use in rural areas is typically higher than average. Because of this, it is important to continue to include NQF #0028 Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention in quality programs.

RESPONSE

Thank you for this comment. Based on the continued importance of this topic area, as well as continued NQF endorsement and use in federal quality measurement programs, the Advisory Group was in agreement that measure #0028 should remain in the updated rural core set.

Tim Size, Rural Wisconsin Health Cooperative

COMMENT

Dear NQF's Rural Health Team:

We support all 5 of the measures submitted for review and recommendation (CAUTI, C-section, C-DIF, HWR, Optimal Diabetes Care).

RWHC’s additional comments are noted below.

Measures that Lost NQF endorsement

We would support removal of Falls with Injury measure from the Core Set. This lost NQF endorsement due to "Failure to pass scientific acceptability based on validity concerns". We agree it is difficult to validate the data. We do like that there are a number of initiatives that track falls data including HRSA Programs and the Flex grant program that tracks falls per inpatient days (not only falls with injury). There is a large disparity between the small rural hospitals from 0 fall rates to well over benchmark (3.44) of 9.15 and no way of knowing when/if a fall will result in an injury. There is claims data to identify injury during a hospital stay which allows this to be captured.

Venous Thromboembolism (VTE) Prophylaxis lost NQF endorsement due to "Measure Withdrawn". This measure is applicable to small rural hospitals and can prevent deep vein thrombosis, heart attack, and stroke. It is an eCQM measure that hospitals can select to submit data on. Of our 13 clients that we submit eCQMs for 11 have selected a VTE Prophylaxis measure for 2022. While NQF withdrew endorsement, we feel it is relevant to stay in the Core Set for small rural hospitals.

The Emergency Transfer Communication Measure lost NQF endorsement due to "Failure to pass scientific acceptability based on reliability concerns; resources were unavailable to conduct the additional testing/requirements for endorsement maintenance". We support that this is no longer needed on the Core set. Changes have occurred that support and ease the exchange of medical information between hospitals. In addition, the increase in small rural hospitals joining "systems" in which the medical record can be viewed. ED physician notes are often "hard wired" to pull in essential information from the visit. This is a required MBQIP measure currently.

RESPONSE

Thank you for this comment; this feedback was shared with the Rural Health Advisory Group for further consideration. During Web Meeting 2, the Advisory Group generally agreed that #0291 *Emergency Transfer Communication Measure* should remain in the rural core set, despite concerns about reporting burden for rural hospitals (67% of votes were in favor of keeping this measure in the core set); however, the Advisory Group revisited this measure during Web Meeting 3. In addition, the Advisory Group also discussed the potential removal of #0202 *Falls with Injury* and #0371 *Venous Thromboembolism Prophylaxis.* The Advisory Group's discussion is summarized in the Web Meeting 3 summary posted on the project website, and final decisions and rationale will be included in the final recommendations report.

Lauren LaPine, Michigan Health & Hospital Association

COMMENT

The Michigan Health and Hospital Association is providing comment on the proposed measures on behalf of our more than 70 small or rural hospital members. It is fair to assume that each of the core sets of measures are, or have been, in use across our state.

RESPONSE

Thank you for providing this context on use of the core set measures in small and rural hospitals within the state of Michigan.

Alexis Malfesi, Rural Carrier Benefits Plan

COMMENT

The National Rural Letter Carriers' Association (NRLCA) represents over 116,000 rural letter carriers of the Postal Service. It is the plan sponsor of the Rural Carrier Benefit Plan (RCBP), a health plan that has participated in the Federal Employee Benefit Program (FEHB) since FEHB's inception in 1960. RCBP serves more than 63,000 lives and is a closed employee organization plan only available to active and retired rural carrier members of the NRLCA.

As part of the FEHB, RCBP reports quality measures that are part of the Office of Personnel Management's (OPM) Plan Performance Assessment (PPA). The PPA uses HEDIS® and CAHPS® measures that address Clinical Quality, Customer Service, and Resource Use (QCR). Measures in the 2023 QCR that most closely align with the original core set include:

- Comprehensive Diabetes Care (HbA1c <8.0%)
- Prenatal and Postpartum Care (Timeliness of Prenatal Care)
- Coordination of Care
- Getting Care Quickly
- Getting Needed Care
- Plan All-Cause Readmissions

RCBP's members live in both rural and urban settings. Because the plan is nationwide, our members are spread across different areas of the U.S., with few geographic areas of concentrated membership. This creates challenges related to low case counts for measures and obtaining electronic data from providers across the country to report digital measures.

RESPONSE

Thank you for sharing this comment, and for providing context on the topic areas measured by the Rural Carrier Benefit Plan that are similar to those included in the current rural core set, such as diabetes care and readmissions measures [#0059 *Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%)*, #0729 *Optimal Diabetes Care*, and #1789 *Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)*].

Newly Endorsed Rural-Relevant Measures

Tim Size, Rural Wisconsin Health Cooperative

COMMENT

Potential Additions

Safe Use of Opioids – Concurrent Prescribing is currently a required eCQM measure to be submitted so could be added to the core set. It may have low volume for small rural hospitals but has been determined to be a required measure for eCQM reporting this year and future years.

Facility-Level 7-Day Hospital Visits after General Surgery Procedures Performed at Ambulatory Surgical Centers. It appears this would be applied to outpatient facility surgery. We feel this would be a good measure to add and would not cause undue hardship to small rural hospitals and could identify potential harmful issues. While this is not identified as a cross cutting measure it can sometimes be a reflection of discharge education and inadequate follow-up.

Screening/Surveillance Colonoscopy we would support adding as it can be of great benefit in diagnosis and treatment of colon cancer timely.

Continuity of Care after Inpatient or Residential Treatment for Substance Use Disorder (SUD) We feel may be a good core measure in the future but the timing doesn't seem right now with staffing issues and behavioral health professional services in demand.

A number of the potential additions measures we are not sure are applicable to clinicians in our smaller rural settings include:

- Oncology: Medical and Radiation - Pain Intensity Quantified
- Admission and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy

RESPONSE

Thank you for sharing these comments. The Advisory Group discussed #3590 *Continuity of Care After Receiving Hospital or Residential Substance Use Disorder (SUD) Treatment*, #3490 *Admission and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy,* #3316e *Safe Use of Opioids – Concurrent Prescribing*, #3357 *Facility-Level 7-Day Hospital Visits after General Surgery Procedures Performed at Ambulatory Surgical Centers*, and #3510 *Screening/Surveillance Colonoscopy* for potential addition during Web Meeting 3, and this feedback was shared to inform discussion. The Advisory Group's discussion is summarized in the Web Meeting 3 summary posted on the project website, and final decisions and rationale will be included in the final recommendations report.

Mujahed Khan, Academy of Nutrition and Dietetics

COMMENT

The Academy of Nutrition and Dietetics strongly recommends that Rural Health Advisory Group consider the Global Malnutrition Composite Score (GMCS) identified in appendix C potential additions under "new rural relevant measures" section as a part of the 2022 core set. The composite measure provides optimal malnutrition care and focuses on adults 65 years and older admitted to inpatient service who received care appropriate to their level of malnutrition risk and/or malnutrition diagnosis if properly identified. Best practices for malnutrition care recommend adult inpatients to be screened for malnutrition risk, assessed to confirm findings of malnutrition if found at-risk, and have the proper severity of malnutrition indicated along with a corresponding nutrition care plan that addresses the respective severity of malnutrition.

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

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

The GMCS directly addresses Equity, including SDOH and access to social services by indiscriminately identifying individuals who are malnourished or at-risk which often results in high probability of food and nutrition insecurity.

RESPONSE

Thank you for this comment in support of further discussion of #3592e *Global Malnutrition Composite Score*. This measure was discussed by the Advisory Group Web Meeting 3, and this feedback was shared with the Rural Health Advisory Group for context. The Advisory Group's discussion is summarized in the Web Meeting 3 summary posted on the project website.

Lauren LaPine, Michigan Health & Hospital Association

COMMENT

The COVID-19 pandemic has had significant impacts on the health of our nation and world. Additionally, the pandemic further exacerbated disparities in health outcomes across genders, races, and ethnicities. The Michigan Health and Hospital Association is supportive of newly endorsed quality measures that track the impacts of COVID on health and well-being. Measures specific to mental/behavioral health (NQF 3332, 3539e, 3622), access to care (NQF 3566, 3481, 3480) and substance use (NQF 3312, 3316e, 3400, 3589, 3590) are all high priorities for MHA rural hospital members, as well as larger health system members.

RESPONSE

Thank you for sharing this comment. The Advisory Group agreed that behavioral health and substance use were high-priority topics to address in the updated rural core set. The Advisory Group discussed additional measures related to mental and behavioral health, access to care, and substance use during Web Meeting 3, including #3622 *National Core Indicators for Intellectual and Developmental Disabilities (ID/DD) Home- and Community-Based Services (HCBS) Measures*, #3312 *Continuity of Care After Medically Managed Withdrawal from Alcohol and/or Drugs*, #3316e *Safe Use of Opioids - Concurrent Prescribing,* #3589 *Prescription or administration of pharmacotherapy to treat opioid use disorder (OUD)*, and #3590 *Continuity of Care After Receiving Hospital or Residential Substance Use Disorder (SUD) Treatment*. Additional detail on the Advisory Group's discussion is summarized in the Web Meeting 3 summary posted on the project website.

Robert Rankin, Healthcare Nutrition Council

COMMENT

As NQF is aware, addressing malnutrition is essential to improving overall healthcare and may ultimately reduce the economic burden incurred when caring for the oldest and sickest Americans. [i], [ii] Disease-related malnutrition can manifest in patients across all spectrums of body mass index, ranging from under to overweight individuals, including those presenting with obesity. Malnutrition often is associated with acute and chronic diseases and injury, such as cancer, stroke, infection, trauma, and surgical procedures. Large-scale studies have shown that as many as half of hospitalized patients and 35% to 85% of older long-term care residents are undernourished. [iii], [iv], [v], [vi]

For these reasons, it is important that robust nutrition measures are included in the Centers for Medicare and Medicaid Services (CMS), and others, quality reporting programs. HNC therefore offers its strong support for the addition of the Global Malnutrition Composite Score (NQF# 3592e), which is listed as a potential addition in Appendix C of the Draft Environmental Scan, to the core set of rural-relevant measures.

[i] Tyler R, Barrocas A, Guenter P, Araujo Torres K, Bechtold ML, Chan LN, Collier B, Collins NA, Evans DC, Godamunne K, Hamilton C, Hernandez BJD, Mirtallo JM, Nadeau WJ, Partridge J, Perugini M, Valladares

A; ASPEN Value Project Scientific Advisory Council. Value of Nutrition Support Therapy: Impact on Clinical and Economic Outcomes in the United States. JPEN J Parenter Enteral Nutr. 2020 Mar;44(3):395-406. doi: 10.1002/jpen.1768. Epub 2020 Jan 29. PMID: 31994761.

[ii] Mullin GE, Fan L, Sulo S, Partridge J. The Association between Oral Nutritional Supplements and 30-Day Hospital Readmissions of Malnourished Patients at a US Academic Medical Center. J Acad Nutr Diet. 2019 Jul;119(7):1168-1175. doi: 10.1016/j.jand.2019.01.014. Epub 2019 Apr 4. PMID: 30954446.

[iii] Robinson MK, Trujillo EB, Mogensen KM, et al: Improving nutritional screening of hospitalized patients: The role of prealbumin. JPEN J Parenter Enteral Nutr. 2003 27:389-395.

[iv] Chima CS, Barco K, Dewitt MLA, et al: Relationship of nutritional status to length of stay, hospital costs, discharge status of patients hospitalized in the medicine service. J Am Diet Assoc 1997 97:975-978.

[v] Braunschweig C, Gomez S, Sheean PM: Impact of declines in nutritional status on outcomes in adult patients hospitalized for more than 7 days. J Am Diet Assoc 2000 100:1316-1322.

[vi] Crogan NL, Pasvogel A: The influence of protein-calorie malnutrition on quality of life in nursing homes. J Geronotol A Biol Sci Med Sci 2003 58A(2):159-164.

RESPONSE

Thank you for this comment in support of further discussion of #3592e *Global Malnutrition Composite Score*. This feedback was shared with the Rural Health Advisory Group during Web Meeting 3 to inform discussion. The Advisory Group's full discussion is summarized in the Web Meeting 3 summary posted on the project website, and final decisions and rationale will be included in the final recommendations report.

Alexis Malfesi, Rural Carrier Benefits Plan

COMMENT

RCBP focuses on QCR measures as part of the OPM PPA. However, we recognize the importance of addressing opioid use, particularly in rural populations, and improving the collection of patient-reported outcomes to address meaningful concepts for patients and families. Both topic areas are captured by select newly endorsed measures in Appendix C (e.g., Use of Pharmacotherapy for Opioid Use Disorder (OUD) and Person-Centered Primary Care Measure PRO-PM).

Opioid Use Disorder

Improving mental and behavioral health outcomes, including those related to substance use disorders, are challenging for rural community members. OUD disproportionately affects people living in rural communities. According to the CDC, the number of pregnant women with OUD at labor and delivery has quadrupled between 1999 and 2014, with overdose and death among women rising 20 percent between 2015 and 2016. (https://www.cdc.gov/media/releases/2018/p0809-women-opiod-use.html).

Further, substance use conditions, can significantly impact outcomes for mothers and their children before, during, and after pregnancy. OUD during pregnancy is associated with negative outcomes for mothers and their children. Chronic use is associated with a lack of prenatal care, increased risk of fetal

growth restriction, preterm labor, and fetal death. Use of opioids during pregnancy can also result in neonatal abstinence syndrome (NAS) in newborns, in which infants exposed to opioids in utero experience withdrawal. Studies suggest that withdrawal signs will develop in 55 to 94 percent of exposed infants. (https://pediatrics.aappublications.org/content/129/2/e540).

Patient-Reported Outcomes Performance Measures

Implementing patient-reported outcomes performance measures in quality reporting and value-based care programs may help drive change in public health areas meaningful to patients and families. Currently, there is a lack of patient-reported outcomes measures included in key value-based programming. While CAHPS® measures address some key concepts related to patient satisfaction, RCBP supports NQF's recommendations to include other patient-reported outcomes measures that more comprehensively address patient and family experience of care, beyond satisfaction, as part of the rural core set.

RESPONSE

Thank you for this comment in support of measures related to opioid use disorder and patient-reported outcome performance measures (PRO-PMs). The Advisory Group discussed three measures related to opioid use during Web Meeting 3: #3175 *Continuity of Pharmacotherapy for Opioid Use Disorder,* #3589 *Prescription or administration of pharmacotherapy to treat opioid use disorder (OUD),* and #3316e *Safe Use of Opioids – Concurrent Prescribing.* The Advisory Group also discussed three PRO-PMs: #3622 *National Core Indicators for Intellectual and Developmental Disabilities (ID/DD) Home- and Community-Based Services (HCBS) Measures,* #3420 *CoreQ: AL Resident Satisfaction Measure,* and #3422 *CoreQ: AL Family Satisfaction Measure*. The Advisory Group's full discussion is summarized in the Web Meeting 3 summary posted on the project website.

Emerging Areas for Rural Measures

Tim Size, Rural Wisconsin Health Cooperative

COMMENT

Emerging Areas

Adult Inpatient Risk Adjusted Sepsis Mortality–we don't think would have a large volume for small rural hospitals. The hospitals we have talked with usually transfer sepsis patients and did not like having to keep them during COVID due to inability to transfer.

Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate Following Acute Ischemic Stroke–we don't think would have a large volume for small rural hospitals. The hospitals we have talked with usually transfer stroke patients.

RESPONSE

Thank you for sharing this comment. These two measures were excluded from further consideration as part of NQF staff review and measure narrowing process, which was based on low case-volume and relative priority of topic areas.

Lauren LaPine, Michigan Health & Hospital Association

COMMENT

The COVID-19 pandemic has had significant impacts on the health of our nation and world. Additionally, the pandemic further exacerbated disparities in health outcomes across genders, races, and ethnicities. The Michigan Health and Hospital Association is supportive of emerging quality measures that track the impacts of COVID on health and well-being. Measures specific to mental/behavioral health (NQF 2605, 2860 1879), access to care (NQF 2904, 2902, 2842, 2845), and substance use (NQF 2951, 2950) are all high priorities for MHA rural hospital members, as well as larger health system members.

RESPONSE

Thank you for sharing this comment. The Advisory Group agreed that behavioral health and substance use measures, as well as access to care, were high-priority topics to address in the updated core set. The Advisory Group considered additional measures in these topic areas during Web Meeting 3, including #2605 *Follow-Up After Emergency Department Visit for Mental Illness or Alcohol and Other Drug Abuse or Dependence*. The Advisory Group's discussion on these measures is summarized in the Web Meeting 3 summary posted on the project website.

Robert Rankin, Healthcare Nutrition Council

COMMENT

The Healthcare Nutrition Council (HNC) is encouraged to see health equity included as an emerging area in Appendix D of the Draft Environmental Scan, and strongly recommends that NQF include nutritional status within this topic category. Nutritional status, and by consequence malnutrition, is often influenced by a variety of social determinants of health (SDoH). According to the World Health Organization (WHO), SDoH are "the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems." [i] In many cases SDoH will have a drastic impact on the availability and quality of foods, how those foods can be prepared and consumed, and what foods will be commonly consumed as staple parts of the diet. As a result, SDoH shape a population's nutritional status and may result in certain populations, such as the elderly, disabled, and the poorest segments of society, becoming malnourished.

[i]World Health Organization. Social Determinants of Health. 2019. Retrieved from http://www.who.int/social_determinants/en/.

RESPONSE

Thank you for this comment providing further context on the importance of nutritional status as part of health equity considerations. This feedback was shared with the Rural Health Advisory Group for further consideration, and #3592e *Global Malnutrition Composite Score* was considered part of Web Meeting 3. The Advisory Group's discussion on this measure is summarized in the Web Meeting 3 summary posted on the project website.

Alexis Malfesi, Rural Carrier Benefits Plan

COMMENT

RCBP supports telehealth and equity as high-priority emerging topic areas for further consideration by the NQF MAP.

Telehealth

Access to telehealth remains a critical need for people living in rural communities. Implementing related measures in quality reporting and value-based care programs may incentivize access to telehealth and improve the quality of telehealth care. Primary care providers, who are often the first contact for patients seeking care, are well-positioned to use telehealth to improve patient outcomes (https://pubmed.ncbi.nlm.nih.gov/27128779/). Telehealth can also be beneficial to address mental and behavioral health conditions and reach patients in rural communities who may not have easy access to providers (https://pubmed.ncbi.nlm.nih.gov/26634618/). Mental health diagnoses were a driver of telehealth visits in 2020 (https://www.healthcaredive.com/news/telehealth-claim-lines-increased-more-than-8335-in-april-fair-health/581039/). Given that an in-person visit for behavioral health services is more than five times as likely to be out-of-network than a primary care visit, utilizing telehealth services to connect members with mental and behavioral health care can be cost-effective for plans while also improving access to needed services (https://assets.milliman.com/ektron/Addiction_and_mental_health_vs_physical_health_Widening_disparities_in_network_use_and_provider_reimbursement.pdf).

Equity

The rural core set should include measures that address disparities across multiple dimensions of social determinants of health (e.g., age, income, employment, race/ethnicity, etc.). The measures identified for further consideration address current gaps in assessing social determinants of health needs. Including these measures in the core set will reinforce that clinicians, hospitals and health systems, and plans should be encouraged to engage in activities that advance health equity.

RESPONSE

Thank you for this comment. The Advisory Group agreed that telehealth-relevant measures and equity-related measures are high priority categories for addition to the rural core set. During Web Meeting 3, the Advisory Group discussed two measures identified as rural-relevant for telehealth use in emergency situations in a prior project: #3175 *Continuity of Pharmacotherapy for Opioid Use Disorder* and *Closing the Referral Loop: Receipt of Specialist Report.* The Advisory Group also discussed the following equity-related measures: *Hospital Commitment to Health Equity, Screen Positive Rate for Social Drivers of Health, Screening for Social Drivers of Health,* and #3592e *Global Malnutrition Composite Score.* The Advisory Group's discussion on measures in these topic areas is summarized in the Web Meeting 3 summary posted on the project website.

Additional Comments

Stephen Simpson, University of Kansas

COMMENT

I laud NQF for proposing standards for rural healthcare. I come from rural roots, and my parents and extended family live there now. I am, however, taken aback that the most expensive and most deadly hospital condition in America - sepsis - is not even mentioned in the document. To your credit, you do include hospital infection prevention, the purpose of which is to prevent sepsis; however, the standards fall short.

Lest you think that sepsis is not a problem in rural hospitals, let me point out that there is a growing body of literature on this account. Patients with sepsis are more likely to die in rural hospitals than in their suburban and urban counterparts, and the condition affects rural residents just as frequently as urban ones.

I've spent at least half my professional career training rural hospitals in Kansas to recognize, treat early, and prevent mortality from sepsis. I also teach how to monitor progression and demonstrate reduced mortality and LOS. Many hospitals, upon initial approach, do not believe that they see sepsis - until they are trained. Numerous CAHs and other small hospitals have demonstrated striking benefits. All of rural America deserves similar treatment. I urge you to re-think this omission.

Steven Q Simpson, MD

Professor of Medicine, University of Kansas

RESPONSE

Thank you for this comment emphasizing the importance of sepsis measures. While sepsis was not described in detail as part of the written scan, it was considered as part of the larger scan for measures in the emerging "Infectious Disease" category. This comment on sepsis was shared with the Rural Health Advisory Group during Web Meeting 3 for further consideration, and the group also discussed a measure related to sepsis for potential addition to the rural core set – #0500 *Severe Sepsis and Septic Shock: Management Bundle*. The Advisory Group's discussion on this measure is summarized in the Web Meeting 3 summary posted on the project website, and all final measure decisions and rationale will be included in the final recommendations report.

Lauren LaPine, Michigan Health & Hospital Association

COMMENT

The 11 measures included in the proposed set rely heavily on manual data abstraction. The Michigan Health and Hospital Association recommends that the National Quality Forum consider developing electronic clinical quality measures (eCQMs) that are in a standard electronic format that integrated with existing hospital electronic health records. While important to maintaining safety and quality, data collection, monitoring, and abstracting requires manpower and can be a strain on an already depleted healthcare workforce. Large health systems across the United States struggle to comply with the required data abstraction and reporting. To do so will be an even greater challenge for small or rural hospitals that have limited infrastructure and resources. The MHA recommends the developers take all opportunities to decrease the amount of manual data abstraction required to adhere to the proposed rural quality measures.

The MHA commends the work the Rural Health Advisory Group completed to determine which of the current quality measures aligned with other federal reporting requirements. Wherever possible, the MHA recommends this continuation of this practice to minimize duplication of reporting and decrease the administrative burden placed on small or rural hospitals to remain in compliance of various federal programs.

RESPONSE

Thank you for sharing this comment on reporting burden for measures that rely on manual data abstraction. While the National Quality Forum does not develop measures, we recognize the potential reduction in burden from the movement to digital quality measures. As part of the Advisory Group's consideration of new measures for the rural core set during Web Meeting 3, members were encouraged to consider feasibility and reporting burden for each of the measures, in balance with current infrastructure and unique reporting challenges in rural areas.