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2022 Key Rural Measures: An Updated List of Measures to Advance Rural Health Priorities

FINAL REPORT

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Table of Contents

Executive Summary

Nearly 1 in 5 Americans lives in rural areas.[1] Providers in rural areas face unique challenges in providing high quality healthcare. This is due to factors such as geographic isolation and transportation issues; higher rates of substance use; higher rates of comorbid conditions (such as smoking and high blood pressure); and limited time, staff, and infrastructure.[2] Ensuring high quality rural care is a national priority to achieve optimal outcomes. Quality measurement and improvement efforts in rural areas may be affected in rural areas by issues such as low case-volume (i.e., providers have too few patients to calculate reliable and valid results for certain quality measures).

In this project funded by the Centers for Medicare & Medicaid Services (CMS), the National Quality Forum (NQF) reconvened the Rural Health Advisory Group to update a list of key rural measures originally developed in 2017-2018. This group of measures represents the best-available measures to address the needs of the rural population—scientifically valid measures that address conditions and topics important to rural patients and are resistant to low case-volume challenges. NQF conducted an environmental scan to identify changes to the measures originally included in the measure list, such as loss of NQF endorsement and lack of use in federal reporting programs. NQF also identified newly endorsed measures in topic areas previously identified as rural relevant, as well as measures addressing emerging topics of importance in rural areas, such as infectious disease. Through an iterative process involving a review of written comments, group discussion, and voting, NQF identified a short list of five current key measures for potential removal and 37 potential additions for detailed Advisory Group discussion in April 2022, which informed the final decisions on additions and removals from the 2018 list of key measures.

Overall, the Rural Health Advisory Group identified a 37-measure list of key rural measures, including 21 hospital setting measures and 16 ambulatory care setting measures. These are generally specified at the clinician or facility level of analysis. While several measures lost endorsement or are no longer used in federal programs, the Advisory Group elected not to remove any measures from the list, given the importance of the topic areas and lack of alternative measures. The Advisory Group added 17 measures to the list during this update, with heavy emphasis on behavioral and mental health, substance use, infectious disease, access to care, and equity and social determinants of health (SDOH). The final list also addresses admissions, readmissions, and hospital visits; care coordination; dementia; diabetes; hypertension; kidney health; maternal health; mortality; patient experience; preventative care; and patient safety. Advisory Group members also identified nine supplementary measures that address important topics in rural health but are specified at the health plan or population level; these include measures on cancer screening, care coordination, emergency care, patient experience, pediatric care, and perinatal and women's health.

In addition to updating the list of key rural measures, the Advisory Group also identified remaining gaps in measurement topic areas. The Advisory Group identified the following gaps within the updated measure list: intentional and unintentional injury, coronavirus disease 2019 (COVID-19), human immunodeficiency virus (HIV), telehealth-relevant measures, cancer screening measures, and cost measures.

While this updated portfolio of key rural measures is not intended to make specific recommendations for measure use in any current or future federal reporting programs, it can serve as a resource for

stakeholders to understand the best measures available for use in a range of rural healthcare settings. The updated list can also promote alignment among the measures used to assess rural healthcare quality. In addition, the identified priority gap areas can inform the development of new measures.

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 (nonmetropolitan[a]) counties.[1] Compared to Americans who live in nonrural areas, rural residents experience significant health disparities that are rooted in issues 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.[3–7]

Performance measurement plays a critical role in healthcare quality improvement in the U.S. However, rural settings may present unique challenges for quality measurement that impede performance evaluation and quality improvement. Case-volumes in rural areas may be insufficient to reliably measure quality.[8] Healthcare providers may experience increased levels of burden with fewer resources available to assist with data collection for quality measures. In addition, patients living in rural areas may be disproportionately impacted by health issues, such as substance use and chronic conditions, which may make direct comparison to nonrural settings a challenge.

NQF convened the Rural Health Advisory Group 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 key group of measures that would allow for reliable and valid comparison of performance across most rural (and nonrural) providers.[11] Since the development of the original list of key rural measures, several changes have occurred in healthcare delivery that affect rural settings. These include the onset of the 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.

This report provides an updated list of 37 key rural measures that represents many of the most important issues facing rural areas today, and it reflects the input of a multistakeholder group of rural health experts as well as feedback from the public. The updated key measures will inform stakeholders about the best measures available for use in a range of rural healthcare settings and health conditions, promote alignment among the measures used to assess rural healthcare quality, and encourage the development of new measures in priority gap areas. The updated key rural measures list is not designed to make specific recommendations for measure use in current or future CMS programs.

The initial work from 2017-2018 used the terminology "rural core set" to refer to the final list of rural-relevant measures selected by the Advisory Group. This 2022 project uses "key rural measures list"

[a] Please note that the terms "rural" and "nonmetropolitan" are used interchangeably in this report for simplicity. However, the definition for "rural" varies between agencies. The Census defines all people, housing, and territory outside an urban area as "rural," while the Office of Management and Budget defines any nonmetropolitan counties as "rural." Refer to https://www.hrsa.gov/rural-health/about-us/what-is-rural for additional information.

instead. Federal liaisons noted the potential sensitivity to the use of the word "core" from tribal stakeholders, and the Advisory Group elected to adjust the terminology to be more inclusive.

Approach and Methodology

NQF developed an approach for collecting information from Advisory Group members about which measures to add or remove. NQF used surveys and group discussion during web meetings to gather feedback and set thresholds that individual measures had to meet to be added or removed from the measure list. More detail about the specific approach for adding new measures, and for removing measures, follows below.

Approach to Removing Measures

The Rural Health Advisory Group reviewed the 2018 measures to determine whether the measures remain relevant and feasible for use in rural health settings and to identify any significant changes to included measures. NQF staff provided an initial review of each measure by cross-referencing NQF's Quality Positioning System™ (QPS) and Measure Information Management System (MIMS), 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, quality programs stewarded by the Health Resources and Services Administration (HRSA), and the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS). NQF used these resources to identify changes in endorsement status, measure specifications, and use in federal programs.

NQF staff also examined prior work conducted by the Rural Health Advisory Group and internally reviewed measures for potential low case-volume challenges or other significant 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). Detailed findings from these reviews can be viewed in the 2022 Final Environmental Scan.

As a result of the environmental scan review, NQF staff identified 10 measures from the 2018 list of key measures for potential removal. NQF used the following criteria to identify the 10 measures:

- Loss of NQF endorsement ***and*** lack of use in CMS federal programs, or
- Prior identification of low case-volume challenges

During Web Meeting 2 of the Rural Health Advisory Group, NQF staff conducted a survey to solicit input from Advisory Group members on which of the 10 measures to consider for removal in a future web meeting. The survey asked Advisory Group members to select measures they would like to keep on the list. To remain on the measure list, each measure had to receive at least 60 percent support. NQF included any measures that did not meet that threshold as part of the discussion at the next web meeting. The results of the survey included keeping six of the measures on the existing list of key rural measures and considering four measures for removal:

- NQF #0202 Falls With Injury – (40 percent support for maintenance)
- NQF #0371 Venous Thromboembolism Prophylaxis – (31 percent support for maintenance)
- NQF #1661 SUB-1 Alcohol Use Screening – (46 percent support for maintenance)
- NQF #0421 Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up – (46 percent support for maintenance)

During a public commenting period for the Draft Environmental Scan, one commenter supported consideration of NQF #0291 *Emergency Transfer Communication Measure* for removal. This measure narrowly passed the Web Meeting 2 survey threshold with 67 percent support to keep it. As a result, the measure was brought forward for discussion. All public comments, including comments in support of measures not selected for potential removal from the original list of measures, can be read in full in Appendix F of the 2022 Final Environmental Scan.

Advisory Group members reviewed, discussed, and voted on the five measures for potential removal during Web Meeting 3 on April 29, 2022. Overall, 13 Advisory Group members submitted votes on the measures. Measures had to meet a threshold of at least 60 percent of the responses for removal. Ultimately, the Advisory Group did not elect to remove any measures. The voting results are in the section titled *Measures Removed From the Key Rural Measures List* below.

Approach to Adding Measures

In addition to reviewing updates to the 2018 key rural measures, the Advisory Group discussed measures for potential addition to the list. NQF staff used the NQF QPS tool to identify a list of 37 measures newly endorsed by NQF in 2018 or later. This excluded measures that did not address priority rural-relevant topics identified by the Rural Health Advisory Group; measures outside the clinician, facility, or population level of analysis; and measures likely to face low case-volume challenges based on staff review. In addition to newly endorsed measures, NQF staff also identified measures in emerging areas of importance in rural settings based on a review of public health statistics and literature, supplemented by input from Advisory Group members during Web Meetings 1 and 2. Based on these inputs, NQF identified the following as emerging areas related to rural settings: telehealth use, equity and SDOH, infectious diseases (including COVID-19), Alzheimer's disease and dementia, kidney disease, unintentional and intentional injuries, and population- or community-level health measures. NQF staff identified an additional 81 measures within these topic areas from prior NQF reports and NQF QPS searches. This list excluded measures previously considered for the original list of key rural measures; measures already represented in the scan of newly endorsed measures; measures outside the clinician, facility, or population level of analysis; measures likely to face low case-volume challenges based on staff review; and measures for which specifications were no longer publicly available. The approach and characteristics of the 118 total measures identified in this review are described in more detail within the Environmental Scan Report.

To facilitate discussion on a short list of measures, NQF refined the list of measures using a weighted scoring process. NQF calculated a weighted score ranging from 0 to 1 based on four measure characteristics: NQF endorsement status, cross-cutting status, outcome or patient-reported outcome performance measure (PRO-PM) measure type, and use in federal programs. NQF used these measure attributes based on the following rationales:

- NQF endorsement serves as a proxy for the scientific acceptability of measure properties, feasibility, usability, and a performance gap.
- Cross-cutting measures are applicable to a broad population and are less likely to face low case-volume challenges.
- Outcome or patient-reported outcome measures reflect the impact of healthcare services and interventions on the health status or experience of the patient.
- Including measures that are active in federal programs will help align the key rural measures with existing data collection and reporting.

During Web Meeting 2 in March 2022, Advisory Group members provided input on the perceived importance of each of these measure characteristics in a survey using a Likert scale rating from 0 to 4 (0 = not important; 4 = very important). From N=13 responses, NQF endorsement status received an average importance rating of 3.23, while cross-cutting status, outcome measure type, and use in federal programs scored 3.38, 3.31, and 2.69, respectively. These relative importance ratings were scaled to a sum of 1 so that an NQF-endorsed measure would receive 0.256 points, an outcome or PRO-PM measure would receive 0.268 points, a cross-cutting measure would receive 0.262 points, and a measure currently used in federal programs would receive 0.213 points. A measure with none of these characteristics would have a weighted score of 0, while a measure with all of these characteristics would have a weighted score of 1.

In addition to this input on measure characteristics, Advisory Group members selected the most important condition-specific and cross-cutting conditions to add to the key rural measures. Among condition-specific topics, the Advisory Group indicated that behavioral and mental health, substance use, emergency services, infectious diseases, kidney care, cancer screenings, and diabetes were important additions. Among cross-cutting topics, Advisory Group members indicated that measures addressing telehealth, access to care, equity and SDOH, and population- or community-level health were most important.

NQF staff developed a final short list of measures for potential addition by evaluating each measure's weighted score and the Advisory Group's priorities. At least two staff members reviewed each measure for consensus before inclusion in the final short list. This review process reduced the list of potential additions from 118 measures to 32 measures. NQF shared the short list with Advisory Group members and federal liaisons prior to Web Meeting 3 for their review and feedback on additional measures to discuss. As a result of Advisory Group and federal liaison input and a public commenting period on the environmental scan, NQF expanded the final short list to include 37 measures.

During Web Meeting 3 in April 2022, the Advisory Group discussed each of the measures on the short list, grouped by topic area. After discussing the measures in each topic area, Advisory Group members voted on whether to include each measure in the updated key rural measures list. Overall, 13 Advisory Group members submitted votes on the measures. Measures had to have at least 60 percent of the respondents supporting inclusion to be added to the key rural measures list. The Advisory Group voted to add a total of 17 measures to the list of key measures. The Advisory Group also discussed two of these measures, #3597 *Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System* and #0018 *Controlling High Blood Pressure*, during Web Meeting 4 in July 2022 after reviewing public comments on

the proposed key rural measures. More details about the final list are in the section titled *Measures Added to the Key Rural Measures List* below.

2022 Updates to Key Rural Measures

The Advisory Group originally identified measures to create a key list of rural-relevant performance measures in 2018. In 2022, the Advisory Group discussed possible measures to add to the list and potential measures to remove from the list. The results of those discussions—measures added or removed—follow below.

Updated Key Rural Measures

The Advisory Group updated the list of key rural measures by adding 17 measures and not removing any measures. This resulted in an updated list of 37 measures.

The full list of key rural measures is presented in the tables below (Table 1 and Table 2). The measures are divided into two categories. The first category includes 21 hospital setting measures, an increase from the nine hospital care measures originally included in the 2018 list of measures. The second category includes 16 measures for use in the ambulatory care setting, also an increase from the 11 ambulatory care measures originally included in the measure list. Within each table, the measures are grouped by topic area for organizational purposes. While some of the measures may be relevant to multiple topic areas (e.g., NQF #0028 *Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention* addresses both preventative care and substance use), each measure is only listed once in the table for clarity. Both categories (hospital and ambulatory settings) include measures related to admissions, readmissions, and hospital visits; behavioral health and substance use; and patient experience. In addition, the hospital care measures address emergency care, health equity, infectious disease, kidney health, maternal health, mortality, and patient safety, while the ambulatory care measures address care coordination, dementia, diabetes, hypertension, and preventative care. Not all topic areas are intended to apply to all rural facilities, and these measures should only be considered for use wherever applicable and appropriate (e.g., NQF #0471 *PC-02 Cesarean Birth* should not be used for facilities that do not provide delivery services). The measures in each group may be used as a starting point to identify strong measures addressing specific topics of interest relevant to a program or initiative.

The key rural measures are generally specified at the individual clinician, group/practice, or facility level. One exception, NQF #0018 *Controlling High Blood Pressure*, is specified at the health plan level. This measure was listed as a supplemental measure to the original key measures developed in 2018. Supplemental measures are measures that the Advisory Group deemed important and rural relevant but not appropriate for the list of key measures due to the level of analysis. In 2018, Advisory Group members noted the importance of a measure assessing blood pressure control in the general population but preferred the inclusion of a clinician-level measure. The current Advisory Group revisited this measure this year and elected to add it to the key rural measures list because it is already being used in measurement programs for clinician accountability, and because no alternative clinician-level measures have been endorsed in this area. (This is similar to #0059 *Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%),* which was also included in the original key rural measures list and remains in the updated list. #0059 is endorsed at the health plan level, but it is used in Medicare reporting and HRSA health center reporting.)

More information on specific changes to the list of key rural measures follows in the sections below. Detailed specifications for the measures in the final updated list are included in Appendix B: Measure Inventory.

Table 1. Updated Key Rural Measures List – Hospital Care Measures

Condition	NQF #	Measure Title	Level of Analysis
Admissions, Readmissions, and Hospital Visits	1789	Hospital-Wide All-Cause Unplanned Readmission Measure (HWR) §	Facility
Behavioral Health and Substance Use	1661	SUB-1 Alcohol Use Screening*§	Facility, Other
-	3590	Continuity of Care After Receiving Hospital or Residential Substance Use Disorder (SUD) Treatment	Facility
-	3316e	Safe Use of Opioids – Concurrent Prescribing	Facility
-	3539e	Use of Antipsychotics in Older Adults in the Inpatient Hospital Setting	Facility
Emergency Care	0291	Emergency Transfer Communication Measure *§	Facility
Health Equity	3592e	Global Malnutrition Composite Score	Facility
-	N/A	Hospital Commitment to Health Equity	Facility
-	N/A	Screen Positive Rate for Social Drivers of Health†	Clinician; Group; Facility; Other: Beneficiary, Population
-	N/A	Screening for Social Drivers of Health†	Clinician; Group; Facility; Other: Beneficiary, Population
Infectious Disease	0138	National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure §	Facility, Other, Population: Regional and State
-	0500	Severe Sepsis and Septic Shock: Management Bundle	Facility
-	0684	Percent of Residents With a Urinary Tract Infection (Long-Stay)	Facility
-	0753	American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure	Facility, Other, Population: Regional and State
-	1717	National Healthcare Safety Network (NHSN) Facility-Wide Inpatient Hospital Onset *Clostridium difficile* Infection (CDI) Outcome Measure§	Facility, Other, Population: Regional and State
Kidney Health	3565	Standardized Emergency Department Encounter Ratio (SEDR) for Dialysis Facilities	Facility
Maternal Health	0471	PC-02 Cesarean Birth§	Facility, Other
Mortality	3504	Claims-Only Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure	Facility

Condition	NQF #	Measure Title	Level of Analysis
Patient Experience	0166	Hospital Consumer Assessment of Providers and Systems (HCAHPS) §	Facility
Patient Safety	0202	Falls With Injury*§	Facility, Other
Other	0371	Venous Thromboembolism Prophylaxis*§	Facility, Other

** Measure is no longer endorsed by NQF.*

† Measure is also applicable to ambulatory care settings.

§ Measure was originally included in 2018.

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Table 2. Updated Key Rural Measures List – Ambulatory Care Measures

Condition	NQF #	Measure Title	Level of Analysis
Admissions, Readmissions, and Hospital Visits	3357	Facility-Level 7-Day Hospital Visits After General Surgery Procedures Performed at Ambulatory Surgical Centers	Facility
-	3597	Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System	Clinician: Group/Practice
Behavioral Health and Substance Use	0711	Depression Remission at Six Months §	Facility, Clinician: Group/Practice
Care Coordination	0097	Medication Reconciliation Post-Discharge §	Clinician: Group/Practice, Health Plan, Clinician: Individual, Integrated Delivery System
-	0326	Advance Care Plan §	Clinician: Group/Practice
Dementia	2872e	Dementia: Cognitive Assessment†	Clinician: Group/Practice, Clinician: Individual
Diabetes	0059	Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%) §	Health Plan
-	0729	Optimal Diabetes Care §	Clinician: Group/Practice
Hypertension	0018	Controlling High Blood Pressure	Health Plan
Patient Experience	0005	CAHPS Clinician & Group Surveys (CG-CAHPS)-Adult, Child §	Clinician: Group/Practice

Condition	NQF #	Measure Title	Level of Analysis
Preventative Care	0028	Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention §	Clinician: Group/Practice, Clinician: Individual
-	0041	Preventive Care and Screening: Influenza Immunization §	Clinician: Group/Practice, Clinician: Individual
-	0418	Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan* §	Clinician: Group/Practice, Clinician: Individual
-	0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up* §	Clinician: Group/Practice, Clinician: Individual
-	2152	Preventive Care and Screening: Unhealthy Alcohol Use: Screening & Brief Counseling §	Clinician: Group/Practice, Clinician: Individual
-	2903	Contraceptive Care – Most & Moderately Effective Methods	Facility, Clinician: Group/Practice, Health Plan, Population: Regional and State

** Measure is no longer endorsed by NQF.*

† *Measure is also applicable to hospital care settings.*

§ *Measure was originally included in 2018.*

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Measures Removed From the Key Rural Measures List

Advisory Group members reviewed, discussed, and voted on five measures for potential removal during Web Meeting 3 on April 29, 2022. A summary of key comments is in Table 3. The threshold for removing measures, based on a survey conducted during Web Meeting 3, was 60 percent in agreement for removal. Based on this threshold, the Advisory Group did not remove any measures from the existing key rural measures list. This demonstrates the continued importance of these topics and conditions for rural populations and the lack of alternative measures suitable for use in rural settings.

Table 3. Summary of Advisory Group Comments on Measures for Potential Removal

NQF ID#	Measure Title	Key Comments
0202	Falls With Injury	• Falls are an important prevention consideration. • The measure may be applicable to multiple facility settings.
0371	Venous Thromboembolism Prophylaxis	• The measure is currently used in federal quality reporting programs.
1661	SUB-1 Alcohol Use Screening	• Alcohol use is a critical topic in rural areas. • The measure lost endorsement because the developer is working on an electronic clinical quality measure (eCQM) version. • Some federal partners prefer an alternative measure, Initiation and Engagement of Alcohol and Other Drug Dependence Treatment, to capture alcohol use.
0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	• The measure is used in multiple federal agencies for quality reporting. • The measure is valuable because it assesses both screening and follow-up.
0291	Emergency Transfer Communication Measure	• A member of the public commented that the measure is reported on by 90% of critical access hospitals participating in the Medicare Beneficiary Quality Improvement Project (MBQIP) and that the measure faced endorsement challenges due to limited availability of patient-level data for statistical testing.

Measures Added to the Key Rural Measures List

Overall, the Advisory Group added 17 measures to the key rural measures (five measures in the ambulatory care setting and 12 measures in the hospital setting). Of these 17 measures, 14 (82 percent) were NQF-endorsed. The measures included a mix of types, including two composite measures, eight outcome measures, six process measures, and one structural measure. Four of the measures had an eCQM specification available. Lastly, eight of the measures are currently used in at least one federal quality reporting program. (Three additional measures—all related to health equity—are under consideration for future use in the Hospital Inpatient Quality Reporting [IQR] Program and/or the Merit-Based Incentive Payment System [MIPS] but have not been finalized.)

The Advisory Group indicated that the following conditions and specialties, in order of importance, were significant additions to the key rural measures list: behavioral and mental health, substance use, emergency services, infectious diseases, kidney care, cancer screenings, and diabetes measures. The

Advisory Group added new measures in all these categories except for cancer screenings and diabetes. NQF did not identify new measures in these areas as part of the short list of measures for discussion; however, diabetes is currently addressed by two ambulatory care measures in the key rural measures list (#0059 *Comprehensive Diabetes Care: Hemoglobin A1c [HbA1c] Poor Control [>9.0%]* and #0729 *Optimal Diabetes Care*). Cancer screening is also addressed in a list of supplementary measures (#0032 *Cervical Cancer Screening,* #0034 *Colorectal Cancer Screening,* and #2372 *Breast Cancer Screening*), but NQF did not identify any clinician- or facility-level measures in this area. These measures are described in further detail in the *Supplementary Measures* section of this report.

The Advisory Group also shared that the following cross-cutting topic areas were most important to add to the rural measures list: measures addressing telehealth, access to care, equity and SDOH, and population and community health measures. The Advisory Group added new measures in all of these areas except for telehealth-relevant measures. However, five measures from NQF's 2021 Rural Telehealth and Healthcare System Readiness Final Report (NQF #0418, #2152, #0097, #0326, and #1789) were already in the original version of the rural measures.

The following new measures received particularly high levels of support from the Advisory Group, with over 80 percent of the voting group in favor of addition:

- NQF #2872e Dementia: Cognitive Assessment – (92 percent)
- NQF #3316e Safe Use of Opioids – Concurrent Prescribing – (92 percent)
- NQF #0753 American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure – (83 percent)
- NQF #0684 Percent of Residents With a Urinary Tract Infection (Long-Stay) – (83 percent)
- NQF #0500 Severe Sepsis and Septic Shock: Management Bundle – (83 percent)
- NQF #3504 Claims-Only Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure – (84 percent)
- NQF #3597 Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System – (83 percent)
- NQF #3357 Facility-Level 7-Day Hospital Visits After General Surgery Procedures Performed at Ambulatory Surgical Centers – (92 percent)
- NQF #0018 Controlling High Blood Pressure – (92 percent)

A summary of comments from Web Meetings 3 and 4 for each proposed measure is also below:

Table 4. Summary of Advisory Group Comments on Measures for Addition

NQF #	Measure Title	Key Comments
0018	Controlling High Blood Pressure	• The measure addresses the significant burden of cardiovascular disease on morbidity and mortality rates in the U.S. • The measure could assist in the prevention of avoidable exacerbations in patient conditions.

NQF #	Measure Title	Key Comments
0500	Severe Sepsis and Septic Shock: Management Bundle	• The measure topic is a critical area of concern with a high burden in rural areas. • Many electronic medical record (EMR)-based measures have implementation challenges. • The measure is relevant to rural settings and an actionable outcome measure.
0684	Percent of Residents With a Urinary Tract Infection (Long-Stay)	• The measure is relevant to rural settings and an actionable outcome measure.
0753	American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure	• Two of the procedures included in the measure are among the most common in rural areas and can account for approximately 20% of hospital-acquired infections. • The measure may have low case-volume challenges in hospitals. • Many EMR-based measures have implementation challenges. • The measure is an actionable outcome measure and relevant to rural settings.
1382	Percentage of Low Birthweight Births	• Federal liaisons confirmed the ability to calculate the measure numerator. • There may be low case-volume challenges for the measure since not all rural facilities offer delivery services or services for complex pregnancies. • The measure addresses an important and known disparity.
3357	Facility-Level 7-Day Hospital Visits After General Surgery Procedures Performed at Ambulatory Surgical Centers	• The measure may be a helpful addition as the number of ambulatory surgical centers (ASCs) increases in rural areas. • The measure represents a reflection of discharge education and inadequate follow-up. • The measure would not cause hardship to smaller rural facilities.
3504	Claims-Only Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure	• The claims-based measure was preferred for the purposes of burden reduction and costs.
3565	Standardized Emergency Department Encounter Ratio (SEDR) for Dialysis Facilities	• No kidney care measures were included in the original list of key rural measures. • There may be low case-volume challenges for measures addressing dialysis facilities.
3590	Continuity of Care After Receiving Hospital or Residential Substance Use Disorder (SUD) Treatment	• The measure addresses a priority topic in rural health, and continuity of care measures for substance use are critical. • The measure is currently collected through a Medicaid-managed care organization billing data, and access to these data is unclear.

NQF #	Measure Title	Key Comments
3597	Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System	• The measure focuses on acute, unplanned hospital admissions, and the federal liaisons confirmed the ability to calculate the measure numerator. • This measure could have unintended consequences (e.g., rewarding providers with lower readmission rates but higher mortality, increasing thresholds for admission). • This measure should be balanced with other information to provide context on performance (e.g., area-specific information about prevalence of health conditions and death rates).
2872e	Dementia: Cognitive Assessment	• The measure topic is important for rural areas and is currently not addressed in the original list of key rural measures. • The measure is currently used in federal programs. • The measure received mixed perceptions of burden based on annual reporting requirements and the ease of eCQM data collection.
3316e	Safe Use of Opioids – Concurrent Prescribing	• The measure is feasible to collect and a low burden to clinicians as an eCQM. • The measure may have low case-volume for small rural hospitals. • Opioid use disorder disproportionately affects individuals in rural areas.
3539e	Use of Antipsychotics in Older Adults in the Inpatient Hospital Setting	• The measure is feasible to collect and a low burden to clinicians as an eCQM. • Antipsychotic use is an important topic across multiple care settings.
3592e	Global Malnutrition Composite Score	• Malnutrition remains an important concern, and Advisory Group members had no concerns about this measure.
N/A	Screen Positive Rate for Social Drivers of Health	• The measure is a priority area but is very early in development and lacks sufficient detail to understand the feasibility for or impact on rural providers.
N/A	Screening for Social Drivers of Health	• The measure is a priority area but is very early in development and lacks sufficient detail to understand the feasibility for or impact on rural providers.
N/A	Hospital Commitment to Health Equity	• The measure is a priority area but is very early in development and lacks sufficient detail to understand the feasibility for or impact on rural providers. • It would be beneficial for CMS to promote the importance of providing information to support the measure (similar to promotional activities regarding the U.S. Census).

Supplementary Measures

In addition to the hospital and ambulatory care measures, the Advisory Group also suggested adding supplementary measures for consideration in rural areas. This group of measures addresses topic areas highly relevant to rural patients and providers. However, these measures were not included in the final key rural measures list due to concerns that the level of analysis was not appropriate for understanding performance at the individual clinician, clinician group/practice, or facility level. Table 5 lists the supplementary measures identified by the Advisory Group in 2018 and 2022.

The 2018 Advisory Group identified five measures (NQF #0032, #0034, #2372, #0024, and #0038) included in the table below. The 2022 Advisory Group identified an additional four measures addressing rural-relevant topics and population health. The added measures addressed care coordination (NQF #3312), emergency care (NQF #2605), and patient experience (NQF #3622); the Advisory Group also added NQF #1382 *Percentage of Low Birthweight Births* based on its discussion that population health measures could help to understand health status across regions and identify potential areas in need of support.

As a note, the Advisory Group had identified one measure (NQF #2903 *Contraceptive Care – Most & Moderately Effective Methods*) as a helpful supplementary measure in the 2018 report. However, this measure was re-endorsed during the spring 2021 cycle for Perinatal and Women's Health with new testing data at the clinician level. As a result, the Advisory Group included this measure in the ambulatory care key rural measures list above.

Table 5. Supplementary Measures for Rural Areas

Condition	NQF #	Measure Title	Level of Analysis
Cancer Screening	0032	Cervical Cancer Screening (CCS) §	Health Plan
-	0034	Colorectal Cancer Screening (COL) §	Health Plan, Integrated Delivery System
-	2372	Breast Cancer Screening §	Health Plan, Integrated Delivery System
Care Coordination	3312	Continuity of Care After Medically Managed Withdrawal From Alcohol and/or Drugs	Population: Regional and State
Emergency Care	2605	Follow-Up After Emergency Department Visit for Mental Illness or Alcohol and Other Drug Abuse or Dependence	Health Plan, Population: Regional and State
Patient Experience	3622	National Core Indicators for Intellectual and Developmental Disabilities (ID/DD) Home and Community-Based Services (HCBS) Measures	Population: Regional and State
Pediatrics	0024	Weight Assessment and Counseling for Nutrition and Physical Activity for Children/Adolescents (WCC) §	Health Plan, Integrated Delivery System
-	0038	Childhood Immunization Status (CIS) §	Health Plan, Integrated Delivery System
Perinatal Care	1382	Percentage of Low Birthweight Births	Population: Community, County or City, Other, Population: Regional and State

§ *Measure was originally included in 2018.*

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Gap Areas for Future Measure Development

During the original creation of the 2018 list of key rural measures, the Advisory Group discussed measurement gap areas in rural settings. The gaps were prioritized as follows, in order of importance: access to care and timeliness of care, transitions of care, cost, substance use (especially alcohol and opioid use), and outcome measures. The Advisory Group also noted that advance directives and end-of-life measures, as well as population health measures at the regional or community level, would address gaps in rural measurement. Lastly, the Advisory Group shared unintended consequences that could result from measurement in these areas. The Advisory Group identified the need to measure and improve access and timeliness of care without penalizing providers for factors such as increased wait times due to the need for transfers. Similarly, the Advisory Group commented on the need to understand the costs of care without penalizing rural providers who are not part of an integrated system or who do not have access to lower-cost options for treatment. These gaps are described in more detail within the 2018 Recommendations Report.

In 2022, NQF staff identified additional emerging areas in rural measurement that should be addressed in the updated key measures; these topics included infectious disease, kidney health, dementia, injuries, and emergency care. Other than these additions, Advisory Group members did not identify additional gaps or unintended consequences of measurement that should be added to the list. Instead, the Advisory Group reiterated the importance of identifying and developing measures that address the previously identified gap areas and are appropriate for rural providers.

The Advisory Group's update of the key rural measures resulted in the expansion of several topic areas previously identified as rural relevant in 2018. Notably, substance use measures were previously a gap area for the list, and three measures in the original list (NQF #1661, #0028, and #2152) addressed alcohol use and tobacco use screening. The current Advisory Group continued to prioritize this topic as critically important for rural settings and added a measure on safe opioid prescribing (NQF #3316e) to the measure list. The Advisory Group also added a measure on continuity of care following hospital or residential substance use disorder treatment (NQF #3590), addressing not only the substance use measure gap but also access to care and transitions of care. Outcome measures are also well represented in the 2022 additions; eight of the 17 new measures were outcome measures.

The 2022 update included measures to address both prior and currently identified gaps related to the emerging areas in rural measurement. The Advisory Group added measures addressing kidney care (NQF #3565 *Standardized Emergency Department Encounter Ratio [SEDR] for Dialysis Facilities*), dementia (NQF #2872e *Dementia: Cognitive Assessment*), equity (NQF #3592e *Global Malnutrition Composite Score* as well as *Hospital Commitment to Health Equity* and two *Screening for Social Drivers of Health* measures), infectious disease (NQF #0500 *Severe Sepsis and Septic Shock: Management Bundle*, #0684 *Percent of Residents With a Urinary Tract Infection [Long-Stay]*, and #0753 *American College of Surgeons – Centers for Disease Control and Prevention [ACS-CDC] Harmonized Procedure-Specific Surgical Site Infection [SSI] Outcome Measure*), and emergency care (NQF #3565 *Standardized Emergency Department Encounter Ratio [SEDR] for Dialysis Facilities*) to the key rural measures list.

However, the following gap areas remain:

Access to Timely Care. Access to care and timeliness of care were identified as gap areas in 2018. This area remains a gap and could be addressed by measure development, including structural measures related to providers' capability to provide timely services, as well as measures relating access to healthcare with patient outcomes (e.g., level of disability).

Care Coordination. Care coordination also remains a gap area that could be addressed by measures addressing transitions and hand-offs at the time of discharge and timely, accurate referrals. These measures should encompass the broader health system (e.g., including measures addressing post-acute care instead of focusing solely on inpatient hospitalization). Additional outcome measures related to care coordination, such as a risk-adjusted healthy days at home measure, could be helpful to consider once available. Advisory Group members also noted that there could be fewer unintended consequences for rural providers if transitions of care are measured at the health plan level.

Intentional and Unintentional Injury. While the burden of disease from intentional and unintentional injury is elevated in rural areas, the environmental scan did not identify any currently endorsed measures addressing these topic areas.

Cardiovascular Disease (CVD). While the updated key measures list includes a preventative measure related to CV (NQF #0018 *Controlling High Blood Pressure),* the Advisory Group may consider additional secondary prevention measures (e.g., measures related to statin therapy and beta blockers) in future updates, given the high prevalence and mortality from CVD and stroke in rural areas.[12–14]

COVID-19. The Advisory Group discussed the potential inclusion of four measures related to COVID-19 vaccination rates among the general population and healthcare personnel. The group agreed that while the topic area is important to include in a future version of the measure list, clinical guidance is still being developed regarding the definition of "fully vaccinated" (i.e., changing guidance on the number and timing of booster shots). The current measures need additional time for testing and understanding feasibility (e.g., access to data sources for employer-reported measures and data capture that encompasses the multiple avenues of vaccine distribution in the early days of the pandemic).

HIV. The U.S. Department of Health and Human Services (HHS) has stated that addressing the HIV epidemic is a priority topic in rural areas.[15] The Advisory Group considered the addition of an HIV measure (NQF #2082 *HIV Viral Load Suppression*), but the measure did not receive strong support due to concerns regarding a lack of risk adjustment and stratification to account for higher rates of uninsurance among patients with HIV.

Serious Illness and Hospice and Palliative Care. The Advisory Group originally identified advance directives and end-of-life care as a gap area in 2018; no newly developed measures were identified in this area, and this topic area remains a gap. Additional measures capturing hospice provider treatment in rural areas (e.g., timely referral to hospice, utilization of hospice and palliative care, and palliative care screening) may be helpful to consider once available.

Telehealth-Relevant Measures. The Advisory Group acknowledged that the importance of telehealth is growing in rural areas, especially given the increase in telehealth use during the COVID-19 pandemic. The group considered the addition of measures identified from NQF's Rural Telehealth and Healthcare System Readiness Final Report but did not add any new measures to the key rural measures list from the

final report. However, multiple measures in this report were already included in the original key rural measures list, including measures on screening for depression (NQF #0418), screening for unhealthy alcohol use (NQF #2152), unplanned readmissions (NQF #1789), medication reconciliation (NQF #0097), and advance care planning (NQF #0326). This aligns with prior discussion from the Advisory Group in 2018 when members agreed that measures should allow for telehealth delivery but should also focus more on access to care than telehealth itself. As telehealth continues to rapidly develop over time, future updates of the key rural measures should consider measures in rural-relevant topic areas that allow for telehealth delivery as they become available. These measures should reflect the capacity for delivering care, as well as outcomes from telehealth visits.

Expanded Equity Measures. The updated list of key measures includes four measures related to screening for social drivers of health, hospital commitment to health equity, and malnutrition screening. However, these measures are specified for the hospital setting. If health equity measures addressing expanded settings (e.g., ambulatory care, home-based care, and community) are developed, these may be helpful additions to the key measures list. The Advisory Group should also continue to consider measures addressing gaps and disparities in care for people within rural communities who are historically underserved by the healthcare system.

Cancer Screening. The Advisory Group indicated that cancer screening was a moderately important addition to the key measures. While three cancer screening measures are represented in the list of supplementary measures, there are no cancer screening measures included as part of the final key rural measures list due to a lack of endorsed measures at the clinician or facility level. Provider-level measurement related to cancer screenings could unintentionally penalize rural providers for barriers to access outside their control.

Cost Measures. The Advisory Group discussed the potential inclusion of two cost measures: NQF #3575 *Total per Capita Cost (TPCC)* and NQF #3510 *Screening/Surveillance Colonoscopy* during the 2022 measure list update. However, group members raised concerns that the total cost of care may be different in rural areas where primary care providers may be obligated to provide services that would typically be covered by specialists in urban areas. Members also noted that cost data for these measures would only come from claims data and would not provide a comprehensive view of costs such as patient transportation to care. Including measures that focus on cost to the patient (e.g., costs for procedures, costs for transportation to appointments) would be beneficial in the future. As with transitions in care, cost measures may have fewer unintended consequences for rural providers if used at a less granular level of analysis (e.g., Accountable Care Organization or health-plan level).

Discussion

In 2018, the Advisory Group convened to identify priorities for rural measures in hospital and ambulatory care. This process resulted in 20 key measures that covered a variety of hospital-level clinical performance measures related to catheter-associated urinary tract infection (CAUTI) and *C. difficile* infection rates, unplanned readmission rates, falls, patient experience, venous thromboembolism prophylaxis, alcohol screening, and Caesarean birth rates. Ambulatory measures focused on patient experience; tobacco screening; influenza vaccination; diabetes care; medication reconciliation; advance care planning; and screening for depression, alcoholism, and body mass index. The Advisory Group selected these measures from a broad set of potential measures, identifying them

as particularly relevant in rural communities. These measures were intended to (1) represent a good way to measure quality within rural hospitals, including avoiding low case-volume challenges, and/or (2) serve as relevant metrics for the critical needs of rural patients, who have elevated risk factors for disease (e.g., chronic health conditions or substance use).

Since the 2018 Advisory Group convened, several important changes in healthcare, and particularly rural healthcare, have occurred. Notably, the onset of the COVID-19 pandemic had far-reaching impacts on health and society. COVID-19 created tremendous disruption in healthcare delivery and had an outsized impact on rural communities. The impact included worse outcomes, higher hospitalization rates, and an exacerbation of chronic underlying problems, including substance use and chronic conditions.[16] As a result of the pandemic, the healthcare field experienced a second major upheaval— the broad shift to telehealth as a replacement for in-person care.[17] Rural communities had less access to this technology due to two factors: (1) There was a greater focus on delivering telehealth to more densely populated communities and (2) Rural residents have lower access to broadband technology, thus limiting connectivity, particularly in patients' homes.[18] The third change, which has not yet been implemented, is the development of the Rural Emergency Hospital, which was created by Congress in 2020 and will become active on January 1, 2023.[19,20] Rural Emergency Hospitals do not provide inpatient services but will provide 24-hour emergency services. Rural Emergency Hospitals were created in response to a prolonged period of hospital closures in rural communities and concerns about the need to improve access to emergency services.[21] This rapidly changing landscape in rural healthcare made it necessary to re-examine whether the original group of key measures needed updating.

The updated list of 2022 key rural measures represented a broad scope of care, with a total of 37 measures across 11 prioritized conditions in inpatient, ambulatory surgical center (ASC), and ambulatory populations. Specifically, the updated key rural measures include four new priorities that were not in the 2018 list: health equity and SDOH, kidney health, dementia, and hypertension. In addition, the Advisory Group did not remove any measures from the 2018 list. Its decision suggests that performance gaps likely remain in the areas identified four years prior.

The Advisory Group added three measures to the list that affect health equity and SDOH. These topics have large effects in many rural communities, particularly with screening for SDOH and assessing a hospital's commitment to health equity. These emerging measures of health equity are particularly novel and relevant, given the increased focus of CMS and other agencies on promoting health equity.[22]

Several disease-specific measures received the highest numbers of votes, including screening for cognitive function in dementia (NQF #2872e *Dementia: Cognitive Assessment*) and control of high blood pressure (NQF #0018 *Controlling High Blood Pressure*). Both are chronic conditions that disproportionately affect rural populations and represent opportunities for improvement, particularly in the delivery of primary care.[23,24] In addition, the Advisory Group included a measure about the safe use of opioids. This addition to the key measures specifically assesses the use of both opioids and benzodiazepines concurrently, which can be associated with higher complication rates. The opioid crisis has had a disproportionate effect on rural communities with respect to prescribing, overdose, and mortality.[25]

The Advisory Group also added several measures in new settings not previously included in the key rural measures list, namely, the measurement of care in ASCs and skilled nursing facilities (SNFs). For

example, there were two measures for ASCs: NQF #0753 *American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure* and NQF #3357 *Facility-Level 7-Day Hospital Visits After General Surgery Procedures Performed at Ambulatory Surgical Centers*. The SNF measure included is NQF #0684 *Percent of Residents With a Urinary Tract Infection (Long-Stay)*. While ASCs and SNFs are traditionally located in more populated areas, they do exist in rural areas.[25] The Advisory Group chose these measures because they may be general enough to have sufficient case-volume for rural facilities.

Additionally, the Advisory Group added measures that affect hospital care, including NQF #0500 *Severe Sepsis and Septic Shock: Management Bundle*, which measures the use of evidence-based protocols in the early care of severe sepsis and septic shock. The Advisory Group noted this measure as a particularly actionable quality measure that could be applied to rural settings and has been associated with improved outcomes.[26] Several additional measures, including a risk-adjusted mortality measure to assess the quality of hospital care and an overall hospital admission rate for patients with chronic conditions, assess the quality of primary care in the local community with respect to prevention.

The updated supplemental measures include several population health measures that are relevant to rural areas. Population health measures assess quality at a large regional or health plan level. Specifically, the measures relate to topics such as colon and breast cancer screening as well as care coordination, emergency care, and pediatrics. The Advisory Group chose topics relevant to rural communities; however, the use of these measures to assess care in rural communities in isolation may be a challenge based on how the measures are constructed. Future iterations of these measures could consider stratifying rural populations within health plans or communities to identify disparities in care. Such an approach could identify gaps in care that could be addressed by health plans and other regions as they create interventions to improve health equity.

There are several limitations to this report. When identifying measures for potential addition to the original measure list, 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. NQF excluded measures that were not at the clinician, facility, or population level. However, NQF staff mitigated the risk of excluding important measures through open solicitations for additional measures from both Advisory Group members and the public. As an additional limitation, NQF staff assessed low case-volume susceptibility based on qualitative input from Advisory Group members, prior reports, and a high-level review of the measure specifications. In future activities, it may be useful to reference objective assessments for low case-volume if data are available.

Conclusion and Next Steps

Since the Advisory Group convened in 2018, rural populations continue to experience persistent disparities in health outcomes. New challenges have arisen in the wake of the ongoing COVID-19 pandemic as well as worsening disparities of care in rural communities.[26] The concurrent expansion of available quality measures for performance evaluation presented an opportunity to revisit key measures relevant to rural communities. This exercise was valuable, as it identified 17 new key measures that should be considered for rural quality measurement, increasing the number from 20 to 37, based on pre-established criteria. In addition, several of the population health measures could be considered rural

relevant and could also be considered by measure developers for stratification by rural and non-rural populations in future versions of these measures.

The 17 additional measures address priority concerns and advance high quality healthcare in rural settings. The new measures address eight priority topics previously identified as gaps, including substance use, access to care, transitions of care, kidney care, dementia, health equity and SDOH, infectious disease, and emergency care. While there were already measures for some of these topics in the original measure list, Advisory Group members continued to prioritize the need for additional measures for behavioral health and substance use, infectious disease, and preventive care. The Advisory Group also identified gaps, including those surrounding intentional and unintentional injury, COVID-19, HIV, telehealth, cancer screening, and costs, as these areas still lack quality measures that would be appropriate for use in rural settings. Remaining gaps, such as measures addressing COVID-19 and telehealth services, were unsurprising, as measure developers are currently working to design new measures to address the pandemic and rapid expansion of telehealth for all care settings and geographic regions.

The rapidly evolving nature of healthcare in rural communities underscores the importance of regular updates to the list of the key rural measures. The structure and focus of the key measures list may also be adapted in future years to stay relevant to policies and health issues in rural areas; for example, future iterations may include additional community-level measures to reflect quality improvement and payment policies promoting coordination around SDOH and population health. Supplemental activities, such as collecting and highlighting best practices for implementing measures for monitoring and improvement within rural areas, could also provide helpful guidance for rural stakeholders seeking to use the key rural measures.

Importantly, the Advisory Group sought to define the use of these key measures. The purpose was not to make specific recommendations for measure use in current or future CMS programs, or to serve as a comprehensive set of required measures for performance measurement in rural healthcare settings; instead, the intention was for providers and administrators to use this list of measures as guidance for selecting the measures most relevant to their populations and most feasible for implementation in their facilities to evaluate performance and identify areas for quality improvement. The updated list can also promote broader alignment in measures used to assess rural healthcare quality.

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Appendices

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

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Appendix B: Measure Inventory

Refer to Excel Tab 1 for detailed specifications and notes on the list of key rural measures.

Appendix C: Public Comments and Proposed Responses

The draft Recommendations Report was posted on the project webpage for public and NQF member comment from June 8, 2022, through June 27, 2022. During the commenting period, NQF received 11 comments from seven organizations. Comments were elicited through the public commenting tool and additional organizational outreach. The comments below are grouped by theme: Relevance of Measures to Rural Areas, Implementation Challenges, Gap Areas, and Additional Comments. The Advisory Group discussed these comments during its final web meeting on July 14, 2022. Public comments are presented as they were received by NQF and have not been edited, except for minor updates to spacing, spelling, and punctuation.

Relevance of Measures to Rural Areas

Julie Alexander, Independence First

COMMENT

[The measures in the list are relevant to rural settings and conditions], but it would be nice to also correlate severe disability with the level of healthcare available.

RESPONSE

Thank you for this comment. The list of supplementary measures (Table 5) currently includes one set of indicators (NQF #3622 *National Core Indicators for Intellectual and Developmental Disabilities (ID/DD) Home- and Community-Based Services (HCBS) Measures*), which assesses the experience of people with intellectual and developmental disabilities related to person-centered care and coordination, community inclusion, choice and control, and human and legal rights; however, this measure does not directly correlate access to healthcare with the severity of disability. NQF did not identify any fully developed measures that address this topic, but the Advisory Group agreed that this measure concept is important, and it has been highlighted as an example in the *Gap Areas for Future Measure Development* section of the report.

Aparna Gupta, National Hospice and Palliative Care Organization

COMMENT

NHPCO believes the quality measures in the list are relevant to rural settings and conditions but can be more precise to better address rural issues. NHPCO commends the inclusion of the health equity measures but believes the measures need to be expanded to include ambulatory, home-based, and community measures. NHPCO commends the inclusion of the NQF #3504 mortality measure but requests that hospice providers' involvement be included and described in this measure. Hospice care is intended to support patients in having a peaceful end of life and should not be utilized only for a few hours as a level of care transfer from a hospital to the hospice General Inpatient (GIP) level of care. This measure is significant when hospice providers' involvement is meaningful.

RESPONSE

Thank you for this comment. Measures were considered for inclusion in the key measures list based on the original specifications defined by the developer. These further recommendations for future measure development (e.g., need for measures that capture hospice provider treatment in rural areas, equity measures in expanded settings) have also been captured in the *Gap Areas for Future Measure Development* section of the Recommendations Report.

Implementation Challenges

Aparna Gupta, National Hospice and Palliative Care Organization

COMMENT

Based on the measures not on the list (e.g., utilization of hospice and palliative care, timely referral to hospice, end of life preferences), there is difficulty reaching patients who are seriously ill. Rural patients tend to be older and more likely to have a serious illness than other parts of the country but the lack of measures to gather this information suggests the struggle in collecting this data (Karla Weng, Janelle Shearer, and Laura Grangaard Johnson. Journal of Palliative Medicine. May 2022. 734-741. http://doi.org/10.1089/jpm.2021.0287)

RESPONSE

Thank you for this comment. The Advisory Group originally identified timeliness of care, transitions of care, advance directives, and end-of-life care as gap areas for rural measurement in 2018. While several measures related to transitions of care were added in this 2022 update, measures addressing hospice and palliative care for patients who are seriously ill remain a gap area for this key measures list. NQF has added "Serious Illness and Hospice and Palliative Care" as a separate category in the list of gap areas to more clearly indicate the remaining areas for future measure development.

Gap Areas

Julie Alexander, Independence First

COMMENT

[The gap areas listed in the report] are relevant, but it would be nice to see if a person with a disability has a more severe disability because of lack of healthcare.

RESPONSE

Thank you for this comment. While NQF did not identify any fully developed measures that address this topic as part of the environmental scan, the Advisory Group agreed that this topic is important, and this measure concept has been added as an example in the *Gap Areas for Future Measure Development* section of the report.

Aparna Gupta, National Hospice and Palliative Care Organization

COMMENT

NHPCO supports the gap measures outlined, particularly those addressing advance care planning and end-of-life measures. Rural hospice and palliative care providers have large coverage areas with patients who tend to have higher mortality rates, more serious illnesses, and fewer financial resources (Karla Weng, Janelle Shearer, and Laura Grangaard Johnson. Journal of Palliative Medicine. May 2022. 734-741. http://doi.org/10.1089/jpm.2021.0287) For these reasons, it is essential when providers are making contact with these patients, they are receiving advance care planning and care that supports their wishes at the end of life.

NHPCO also supports the emerging areas identified by the Advisory Group; specifically measures related to dementia and emergency care. The 2018 measures focus on patient experience and the related 2022 NQF measures include a patient's perception of feeling heard and understood by their provider. This measure could also include their experience of their pain being managed appropriately.

NHPCO recommends considering additional measures not included in the Advisory Group's discussions. These measures would focus on care coordination at time of discharge and timely, accurate referrals. Measures to be included in the future should better represent the entirety of the health system. As the measures are listed currently, there are no measures addressing post-acute care, including hospice and palliative care needs. These measures should include timely referral to hospice (i.e., how much time post admission to a palliative care or hospice consult occurred), which is a reasonable extension of the 2018 Advisory Group gap area of transitions and timeliness of care. In addition, a measure focused on palliative care screening would be beneficial for certain diagnoses, such as cancer, heart failure, and COPD. Also, measures should address gaps for populations within rural communities who are historically underserved by the health care system.

RESPONSE

Thank you for sharing your support for measurement in emerging areas, including dementia and emergency care. NQF has added "Serious Illness and Hospice and Palliative Care" to the *Gap Areas for Future Measure Development* section of the report to more clearly indicate that advance care planning and end-of-life care remain a gap area for rural measurement and that additional care coordination and palliative care screening measures could be helpful additions. These comments on addressing expanded healthcare settings and disparities for underserved populations in rural areas have also been incorporated into the gap areas.

Additional Comments

Mujahed Khan, Academy of Nutrition and Dietetics

COMMENT

Academy of Nutrition and Dietetics - NQF Comments on 2022 Key Rural Measures Draft Report

The Academy of Nutrition and Dietetics is pleased to see the Rural Health Advisory Group selecting the Global Malnutrition Composite Score (GMCS) as set of key rural-relevant measures noted under Table 1 Updated Key Rural Measures List – Hospital Care Measures in the Rural Health Key Measures Update Draft Recommendations Report.

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 and for providing additional detail on the rationale and components of the *Global Malnutrition Composite Score* measure.

Gary Price, The Physicians Foundation

COMMENT

The Physicians Foundation writes to endorse the Rural Health Advisory Group's recommendation to include the measures *Screening for Social Drivers of Health* and *Screen Positive Rate for Social Drivers of Health*.

We write not only as the developer of these measures, but also as the physician leaders and chief executives of 21 state and county medical societies that direct the Foundation's activities. Our conviction regarding the importance and timeliness of these measures is rooted in the perspective of the practicing primary care and specialist physicians across the country.

Every day, physicians encounter patients who have made impossible trade-offs between refilling their medicine or buying food. These factors lead to physician burnout (1) and effectively penalize physicians (2) caring for affected patients via lower MIPS scores. A recent *JAMA* study found that SDOH were associated with 37.7% of variation in price-adjusted Medicare per beneficiary spending between counties in the highest and lowest quintiles of spending in 2017 (3).

Yet there are currently no SDOH measures in any federal quality and payment programs, and these factors are still not accounted for in geographic risk adjustment or cost benchmarks. The Advisory Group's recommendation to address this measure gap aligns with CMS' decision to propose these SDOH measures for the Hospital IQR.

Through its Accountable Health Communities Model (AHC), CMS has tested these SDOH measures for five years in 644 clinical sites, with six of the 30 AHC awardees serving rural counties.

These SDOH measures have drawn media attention and galvanized stakeholders across the sector, many of whom have emphasized the importance of the *Screen Positive Rate for Social Drivers of Health* measure. The Foundation likewise recognizes that this data is imperative for a number of reasons, including supporting quality improvement activities, making visible and addressing factors that contribute to health disparities, and enabling CMS to finally account for SDOH in risk adjustment/scoring.

We also note the imperative for CMS, NQF, and other stakeholders to support alignment of SDOH measures across public and private quality and payment programs to avoid fragmentation and unnecessary burden on physicians and patients.

Over time, these SDOH measures will be improved with the benefit of the data generated by these measures in practice. We also recognize that given the challenges facing our healthcare system writ large and the commitment to equity and the reduction in health disparities that CMS and other

healthcare institutions across the country have declared – now is the time to implement SDOH measures in practice.

https://www.annfammed.org/content/17/6/487.full

https://jamanetwork.com/journals/jama/fullarticle/2770410

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2780864

RESPONSE

Thank you for this comment and for providing additional detail on the importance of social determinants of health (SDOH) measures, such as the *Screening for Social Drivers of Health* and *Screen Positive Rate for Social Drivers of Health* measures.

Melanie Shahriary, on behalf of Donald Lloyd-Jones, American Heart Association

COMMENT

The AHA is committed to decreasing the health disparities and inequities that exist in the United States. Addressing the unique needs of rural populations is critically important to this effort and to improving the overall health and well-being of the nation. We commend the NQF staff and the MAP Rural Health Advisory Committee for their meticulous work in evaluating updates to the Key Rural Measures set and advancing this important work.

We strongly support the Advisory Group's inclusion of several measures that address screening and primary prevention, e.g., tobacco cessation, BP control and BMI screening and follow-up. However, given the higher prevalence of cardiovascular disease (CVD) in rural populations (1) and higher death rates for CVD and stroke than in urban areas (2, 3), we urge the Advisory Group to consider the inclusion of measures of secondary prevention, such as the CMS measure Statin Therapy for the Prevention and Treatment of Cardiovascular Disease and other existing measures addressing prescription of medications such as beta blockers for patients with known CVD or who have had a myocardial infarction. Our specific comments on two of the measures proposed for inclusion are outlined below.

NQF #3597 Clinician Group Risk-standardized Hospital Admission Rates for Patients With Multiple Chronic Conditions:

Although we agree that coordination of care is even more critical for patients with multiple chronic conditions, we oppose adding this measure to the updated Key Rural Measures set. Our primary concern is the risk of unintended consequences because it does not adequately consider the competing risk of mortality. Providers with lower readmission rates but higher mortality rates for more severely ill patients could paradoxically appear to be providing better quality care. Multiple recent peer-reviewed publications have examined the association between incentives to reduce readmissions and increased mortality rates. (3-7) We would suggest that the Advisory Group consider whether a risk-adjusted healthy days at home measure would be a better marker of quality of care with less risk of unintended consequences.

It is also unclear whether hospital readmission rates truly reflect the quality of care for all patient populations and whether incentivizing lower readmissions could potentially exacerbate disparities in care. Admission rates may be modified by providing better quality care or they may be modified by

simply increasing the threshold to admit patients who would benefit from admission. Thus, they may be measuring only differences in admission thresholds or even unmeasured differences in social risk or disease severity and not quality of care. We suggest that CMS consider a measure such as risk-adjusted home time, which, if carefully designed, might better balance the competing risks of readmission and mortality and mitigate some of these concerns.

The AHA supports a systems-level approach by clinicians to better coordinate care across providers and settings of care. This is even more critical in rural areas, given geographic and transportation challenges that exist. However, we are not convinced that holding individual physicians or physician groups accountable for all unplanned readmissions would contribute to improving rural systems of care and outcomes for patients.

NQF #0018 Controlling High Blood Pressure

The AHA supports adding NQF #0018 to the Key Rural Measure set, especially since Cardiovascular Care seems underrepresented in the measure set. This measure will certainly contribute to better control of BP, reducing the risk for heart disease and stroke for many patients. However, we do have some reservations about this measure, which we have previously shared with the measure developer. Our concerns relate to the one-size-fits-all BP goal of < 140/90 mm Hg specified in the measure. Many patients would benefit from and should receive more intensive BP lowering than this to further reduce their risk. A goal of < 140/90 may suggest to patients and their healthcare providers that their treatment is adequate if they reach this goal. However, we recognize that the measure allows providers the flexibility to treat to a lower target, and the measure is widely used and included in national quality reporting programs. Until a more nuanced measure is available, we support its inclusion.

We appreciate the opportunity to comment on the proposed additions to the Key Rural Measures set. If you have any questions, please contact Melanie Shahriary, RN, BSN at melanie.shahriary@heart.org.

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RESPONSE

Thank you for these comments. The Advisory Group agreed that secondary CVD prevention is important and added measures related to statin therapy and beta-blockers to the list of gaps for consideration in future iterations of the Key Measures List. The Advisory Group also considered these comments opposing inclusion of NQF #3597 *Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System* in the key measures list; while the Advisory Group agreed that NQF #3597 should remain in the Key Measures List, additional context on potential unintended consequences has been included in Table 4. Lastly, the Advisory Group acknowledged comments on the blood pressure goal specified in NQF #0018 *Controlling High Blood Pressure;* for purposes of the Key Measures List, the group will encourage use of the measure as specified.

Rebecca Onie, on behalf of Rocco Perla, The Health Initiative

COMMENT

The Advisory Group's "[True] North" statement provides: "The updated core set will . . . encourage development of new measures in priority gap areas." Despite this, its weighted scoring algorithm is designed to favor existing measures over new ones, impeding the consideration of new measures that [address] such gaps.

Using the current algorithm, an existing measure (defined here as one that is NQF-endorsed and active in a program) is guaranteed a score of 0.469 (on a scale of 0 to 1) for these two factors. A measure that is neither NQF-endorsed nor active in a federal program—the profile of most new measures—is guaranteed a score of zero for those two factors. Prospective new measures start 0.47 points behind NQF-endorsed measures in current programs. New measures only gain points in the "cross-cutting" and "measure type" factors. Thus, existing measures have possible scores from 0.469 (low) to 1 (high), while measures likely to be new have possible scores from 0 (low) to 0.53 (high). For a process seeking to encourage development of new measures, this rubric raises concerns.

While the Advisory Group considers factors beyond this score (e.g., impact on patient outcomes, priority area for rural patients, reliability, and validity), this algorithm is its starting point. There is a straightforward way to adjust this scoring to more fully align with NQF's commitment to develop new measures in priority gap areas.

To more fully enable consideration of potential new measures, the Advisory Group's algorithm could be adjusted to include an additional "priority gap area" factor. To do so, each existing factor could "donate" the same amount of its weight to this new factor. For example, the factor capturing NQF endorsement

currently has a weight of 0.256. Donating 20% of this factor's weight would contribute 0.0512 points to the priority gap area factor—and the NQF endorsement factor would then be weighted 0.2048 (0.256 - 0.0512 = 0.2048).

If this 20% contribution were applied to each factor, it would produce the adjusted values in Table 2 and the new algorithm would be represented as follows: Score = (0.2048 x E) + (0.2144 x T) + (0.2096 x C) + (0.1704 x U) + (0.1998 x P), where P = Priority gap area (1 = priority gap, 0 = not priority gap).

The 20% donation was used since it produces weights lower than every factor other than "use in federal programs"—and it was applied equally to all factors to ensure the relative importance of measure characteristics identified by Advisory Group remained intact. An alternative donation value could be used. This adjusted algorithm creates a more level playing field for new measures addressing priority gaps. This adjusted approach (or one like it) could be significant in supporting NQF's commitment to addressing priority measurement gaps.

RESPONSE

Thank you for this insightful comment. To provide additional context on the process for prioritizing measures, the Advisory Group participated in a poll to define the weights for important measure characteristics, such as endorsement status and use in federal programs. The polling results affirmed that current use in federal programs remained important to group members for promoting measure alignment and that endorsed measures were preferred where available because they have been evaluated by an expert committee for factors including opportunity for improvement, reliability, validity, etc. Separately, the Advisory Group ranked high-priority gap areas and considered the highest-scoring measures within each of these gap areas; this meant that newly developed measures were included for priority gap areas where more established measures are not yet available (e.g., measures related to health equity and social determinants of health).

NQF realizes this is an imperfect approach for identifying all relevant measures. As a mitigation strategy, NQF designated a period of time for the Advisory Group to review the short list of measures and suggest any measures that should be considered for further discussion, including any newly developed measures. NQF recognizes the potential benefit of these suggestions for the algorithm and proposed this modified approach to the Advisory Group to consider as part of future updates to the Rural Key Measures List; Advisory Group members agreed that this modified approach could be considered by the next group as part of their update process.

Meredith Ponder, Defeat Malnutrition Today

COMMENT

The Defeat Malnutrition Today coalition is pleased that the Rural Health Advisory Group has selected the *Global Malnutrition Composite Score* as part of their set of key rural-relevant hospital care measures.

We are a coalition of over 120 members committed to defeating older adult malnutrition across the continuum of care. We are a diverse alliance of stakeholders and organizations working to achieve a greater focus on malnutrition screening, diagnosis, and intervention through regulatory and/or legislative change across the nation's health care system.

We believe that the Global Malnutrition Composite Score is an important component of hospital care, including in rural areas, and we commend your recognition of this fact. The Score summarizes the key steps that already should exist in the nutrition care workflow in an acute care setting (malnutrition screening, assessment, diagnosis, and development of a care plan) and which should be a regular part of all hospital care.

We also believe that the *Global Malnutrition Composite Score* fully addresses equity, including social determinants of health and access to social services. As our National Coordinator Bob Blancato wrote in a November 2021 Health Affairs Forefront article, "Non-Hispanic Black patients were more likely to be at risk for malnutrition, have a diagnosis of malnutrition, and experience a higher 30-day readmission rate. These disparities among higher-risk groups could be addressed by tailored interventions."

For older adults, social determinants of health, such as nutrition, play a critical role not only in better health outcomes, but also in improving overall well-being. Most older adults have more than one chronic condition, and older adults of color, including American Indian and Black populations, tend to have higher rates of specific nutrition-related chronic diseases, such as diabetes and heart disease. Including nutrition evaluations and services as part of older adult healthcare is recommended to avoid and minimize the effects of nutrition-related disease.

As a coalition containing many community-based organizations, our members have seen the growing incidence of older adults with malnutrition living in community settings. Unfortunately, a formal diagnosis of malnutrition is typically not made until an older adult is hospitalized. We believe that the *Global Malnutrition Composite Score* is key to ensuring continuity of care as older adults transition home from acute care hospitals into community settings through the creation of a nutrition care plan for discharge.

Nutrition care plans typically involve connecting patients to community resources, such as local home-delivered and congregate meals programs, federal nutrition assistance programs, and community-based dietetics care. That way, the nutrition care that starts in the hospital continues into the community when patients leave.

Thank you again for your attention to this measure.

RESPONSE

Thank you for this comment and for providing additional detail on the importance of the *Global Malnutrition Composite Score* measure in addressing equity and social determinants of health for older adults.

Aparna Gupta, National Hospice and Palliative Care Organization

COMMENT

NHPCO is grateful for the opportunity to offer comments towards key rural measures. Given the concerns with lack of access in the rural care environment, which often is seen as due to the rural providers' structural limitations in offering access, we suggest consideration of rural key measures that reflect the providers' capability for providing timely services to populations in key disease areas like dementia and advanced chronic disease. We also suggest consideration of rural measures that reflect the capacity and outcomes of delivering telehealth in the rural landscape.

RESPONSE

Thank you for this comment. NQF has added a category within the *Gap Areas for Future Measure Development* section of the report, highlighting the continued need for measures related to providers' ability to provide timely care. NQF has also added a sentence specifying that telehealth-relevant measures addressing capacity and outcomes should be considered in future iterations of the key measures list.