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

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*DRAFT #1*

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## Executive Summary

Nearly 1 in 5 Americans lives in rural areas.<sup>1</sup> 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.<sup>2</sup> 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 (i.e., nonmetropolitan) counties.<sup>1</sup> 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.<sup>2-7</sup>

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.<sup>8</sup> 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.<sup>11</sup> 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” 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; more details about these measures 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
<b>Admissions, Readmissions, and Hospital Visits</b>	1789	Hospital-Wide All-Cause Unplanned Readmission Measure (HWR) §	Facility
<b>Behavioral Health and Substance Use</b>	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
<b>Emergency Care</b>	0291	Emergency Transfer Communication Measure *§	Facility
<b>Health Equity</b>	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
<b>Infectious Disease</b>	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 <i>Clostridium difficile</i> Infection (CDI) Outcome Measure §	Facility, Other, Population: Regional and State
<b>Kidney Health</b>	3565	Standardized Emergency Department Encounter Ratio (SEDR) for Dialysis Facilities	Facility
<b>Maternal Health</b>	0471	PC-02 Cesarean Birth §	Facility, Other
<b>Mortality</b>	3504	Claims-Only Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure	Facility

Condition	NQF #	Measure Title	Level of Analysis
<b>Patient Experience</b>	0166	Hospital Consumer Assessment of Providers and Systems (HCAHPS) §	Facility
<b>Patient Safety</b>	0202	Falls With Injury* §	Facility, Other
<b>Other</b>	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.

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

Condition	NQF #	Measure Title	Level of Analysis
<b>Admissions, Readmissions, and Hospital Visits</b>	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
<b>Behavioral Health and Substance Use</b>	0711	Depression Remission at Six Months §	Facility, Clinician: Group/Practice
<b>Care Coordination</b>	0097	Medication Reconciliation Post-Discharge §	Clinician: Group/Practice, Health Plan, Clinician: Individual, Integrated Delivery System
	0326	Advance Care Plan §	Clinician: Group/Practice
<b>Dementia</b>	2872e	Dementia: Cognitive Assessment †	Clinician: Group/Practice, Clinician: Individual
<b>Diabetes</b>	0059	Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%) §	Health Plan
	0729	Optimal Diabetes Care §	Clinician: Group/Practice
<b>Hypertension</b>	0018	Controlling High Blood Pressure	Health Plan
<b>Patient Experience</b>	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.

## 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	<ul style="list-style-type: none"> <li>Falls are an important prevention consideration.</li> <li>The measure may be applicable to multiple facility settings.</li> </ul>
0371	Venous Thromboembolism Prophylaxis	<ul style="list-style-type: none"> <li>The measure is currently used in federal quality reporting programs.</li> </ul>
1661	SUB-1 Alcohol Use Screening	<ul style="list-style-type: none"> <li>Alcohol use is a critical topic in rural areas.</li> <li>The measure lost endorsement because the developer is working on an electronic clinical quality measure (eCQM) version.</li> <li>Some federal partners prefer an alternative measure, <a href="#">Initiation and Engagement of Alcohol and Other Drug Dependence Treatment</a>, to capture alcohol use.</li> </ul>
0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	<ul style="list-style-type: none"> <li>The measure is used in multiple federal agencies for quality reporting.</li> <li>The measure is valuable because it assesses both screening and follow-up.</li> </ul>
0291	Emergency Transfer Communication Measure	<ul style="list-style-type: none"> <li>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.</li> </ul>

## 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 Meeting 3 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	<ul style="list-style-type: none"> <li>• The measure addresses the significant burden of cardiovascular disease on morbidity and mortality rates in the U.S.</li> <li>• The measure could assist in the prevention of avoidable exacerbations in patient conditions.</li> </ul>

NQF #	Measure Title	Key Comments
0500	Severe Sepsis and Septic Shock: Management Bundle	<ul style="list-style-type: none"> <li>The measure topic is a critical area of concern with a high burden in rural areas.</li> <li>Many electronic medical record (EMR)-based measures have implementation challenges.</li> <li>The measure is relevant to rural settings and an actionable outcome measure.</li> </ul>
0684	Percent of Residents With a Urinary Tract Infection (Long-Stay)	<ul style="list-style-type: none"> <li>The measure is relevant to rural settings and an actionable outcome measure.</li> </ul>
0753	American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure	<ul style="list-style-type: none"> <li>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.</li> <li>The measure may have low case-volume challenges in hospitals.</li> <li>Many EMR-based measures have implementation challenges.</li> <li>The measure is an actionable outcome measure and relevant to rural settings.</li> </ul>
1382	Percentage of Low Birthweight Births	<ul style="list-style-type: none"> <li>Federal liaisons confirmed the ability to calculate the measure numerator.</li> <li>There may be low case-volume challenges for the measure since not all rural facilities offer delivery services or services for complex pregnancies.</li> <li>The measure addresses an important and known disparity.</li> </ul>
3357	Facility-Level 7-Day Hospital Visits After General Surgery Procedures Performed at Ambulatory Surgical Centers	<ul style="list-style-type: none"> <li>The measure may be a helpful addition as the number of ambulatory surgical centers (ASCs) increases in rural areas.</li> <li>The measure represents a reflection of discharge education and inadequate follow-up.</li> <li>The measure would not cause hardship to smaller rural facilities.</li> </ul>
3504	Claims-Only Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure	<ul style="list-style-type: none"> <li>The claims-based measure was preferred for the purposes of burden reduction and costs.</li> </ul>
3565	Standardized Emergency Department Encounter Ratio (SEDR) for Dialysis Facilities	<ul style="list-style-type: none"> <li>No kidney care measures were included in the original list of key rural measures.</li> <li>There may be low case-volume challenges for measures addressing dialysis facilities.</li> </ul>
3590	Continuity of Care After Receiving Hospital or Residential Substance Use Disorder (SUD) Treatment	<ul style="list-style-type: none"> <li>The measure addresses a priority topic in rural health, and continuity of care measures for substance use are critical.</li> <li>The measure is currently collected through a Medicaid-managed care organization billing data, and access to these data is unclear.</li> </ul>
3597	Clinician-Group Risk-Standardized Acute Hospital Admission Rate for Patients With Multiple Chronic Conditions Under the Merit-Based Incentive Payment System	<ul style="list-style-type: none"> <li>The measure focuses on acute, unplanned hospital admissions, and the federal liaisons confirmed the ability to calculate the measure numerator.</li> </ul>

NQF #	Measure Title	Key Comments
2872e	Dementia: Cognitive Assessment	<ul style="list-style-type: none"> <li>The measure topic is important for rural areas and is currently not addressed in the original list of key rural measures.</li> <li>The measure is currently used in federal programs.</li> <li>The measure received mixed perceptions of burden based on annual reporting requirements and the ease of eCQM data collection.</li> </ul>
3316e	Safe Use of Opioids – Concurrent Prescribing	<ul style="list-style-type: none"> <li>The measure is feasible to collect and a low burden to clinicians as an eCQM.</li> <li>The measure may have low case-volume for small rural hospitals.</li> <li>Opioid use disorder disproportionately affects individuals in rural areas.</li> </ul>
3539e	Use of Antipsychotics in Older Adults in the Inpatient Hospital Setting	<ul style="list-style-type: none"> <li>The measure is feasible to collect and a low burden to clinicians as an eCQM.</li> <li>Antipsychotic use is an important topic across multiple care settings.</li> </ul>
3592e	Global Malnutrition Composite Score	<ul style="list-style-type: none"> <li>Malnutrition remains an important concern, and Advisory Group members had no concerns about this measure.</li> </ul>
N/A	Screen Positive Rate for Social Drivers of Health	<ul style="list-style-type: none"> <li>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.</li> </ul>
N/A	Screening for Social Drivers of Health	<ul style="list-style-type: none"> <li>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.</li> </ul>
N/A	Hospital Commitment to Health Equity	<ul style="list-style-type: none"> <li>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.</li> <li>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).</li> </ul>

## 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
<b>Cancer Screening</b>	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
<b>Care Coordination</b>	3312	Continuity of Care After Medically Managed Withdrawal From Alcohol and/or Drugs	Population: Regional and State
<b>Emergency Care</b>	2605	Follow-Up After Emergency Department Visit for Mental Illness or Alcohol and Other Drug Abuse or Dependence	Health Plan, Population: Regional and State
<b>Patient Experience</b>	3622	National Core Indicators for Intellectual and Developmental Disabilities (ID/DD) Home and Community-Based Services (HCBS) Measures	Population: Regional and State
<b>Pediatrics</b>	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
<b>Perinatal Care</b>	1382	Percentage of Low Birthweight Births	Population: Community, County or City, Other, Population: Regional and State

§ Measure was originally included in 2018.

## 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:

**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.

**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.<sup>12</sup> 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.

**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.

**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.

**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.

## 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.<sup>13</sup> 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.<sup>14</sup> 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.<sup>15</sup> The third change, which has not yet been implemented, is the development of the rural emergency hospital, which was created by Congress in 2020.<sup>16</sup> 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.<sup>17</sup> 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.<sup>18</sup>

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.<sup>19,20</sup> 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.<sup>21</sup>

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.<sup>21</sup> 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.<sup>22</sup> 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.<sup>22</sup> 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.

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

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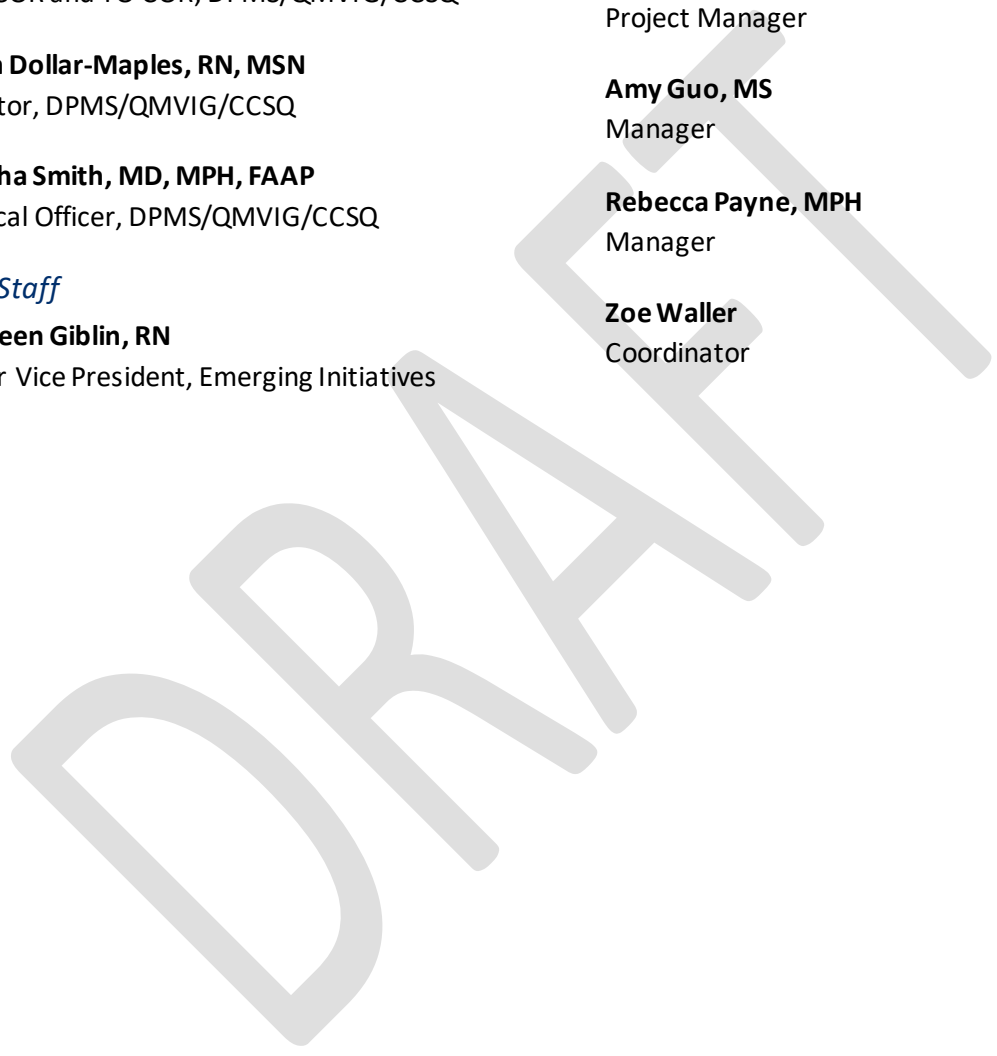
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## Appendix B: Measure Inventory

Refer to [Excel Tab 1](#) for detailed specifications and notes on the list of key rural measures.