Performance Measurement for Rural Low-Volume Providers: Environmental Scan and Analysis

January 15, 2015

This report is funded by the Department of Health and Human Services under contract HHSM-500-2012-00091 Task Order HHSM-500-T0013.
Background and Context

With the publication of the Institute of Medicine's landmark reports *To Err is Human* and *Crossing the Quality Chasm* in 1999 and 2000, respectively, Americans became aware of the serious deficiencies in the safety and quality of America's healthcare system. These reports prompted numerous and varied efforts across a multitude of stakeholder groups to improve healthcare quality and safety. An essential component of these improvement efforts is the quality measurement enterprise: the development, implementation, and use of performance measures for assessing care quality, safety, cost, and efficiency.

More recently, the Affordable Care Act mandated the creation of a National Strategy for Quality Improvement in Health Care (the "National Quality Strategy" or NQS). The NQS articulated three objectives for healthcare quality improvement (the "triple aim"): better care, affordable care, and healthy people and communities. To achieve these objectives, the NQS identified the following six priorities: reducing harm to patients, facilitating communication and care coordination, empowering patients and families to be involved in their care, implementing evidence-based prevention and treatment, promoting healthy behaviors and environments at the community level, and implementing new healthcare delivery models that simultaneously reduce costs and improve quality. Together, these objectives and priorities serve as the "blueprint" for healthcare performance measurement in the U.S.

The ultimate goal underlying healthcare performance measurement is to improve care. Performance measurement results are used in a variety of ways, including internal quality improvement efforts by clinicians, hospitals, nursing facilities, health plans, etc.; public reporting to inform healthcare consumers and aid in decisionmaking, accreditation and certification programs, healthcare network inclusion, exclusion, or tiering decisions, and in various types of payment incentive programs by both public and private payers.

The Centers for Medicare & Medicaid Services (CMS), the nation's largest healthcare insurer and purchaser, has instituted many setting- and provider-based programs aimed at driving healthcare improvement, increasing transparency, and influencing payment. Earlier programs have run the gamut from encouraging voluntary participation in reporting performance results to CMS to mandating participation and reporting performance results publicly. More recently, programs created under the Affordable Care Act have coupled mandated participation with payment adjustments, including bonuses and sometimes penalties, based on performance results (i.e., pay for performance).

However, many of the CMS quality improvement programs systematically exclude certain facilities and clinicians for programmatic, methodological, or other reasons. For example, many of the CMS hospital-based programs exclude (or at least do not mandate participation by) facilities that are not paid through the Inpatient Prospective Payment System (PPS) (e.g., Critical Access Hospitals) or that do not meet

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requirements for a minimum number of cases. Similarly, the CMS clinician-based programs currently exclude providers who are not paid under the Medicare Physician Fee Schedule (e.g., those providing services through Federally Qualified Health Centers [FQHCs]) and those with low case volumes (potentially affecting many in small or solo practices).

A large proportion of the hospitals, clinics, and clinicians that are excluded from these CMS quality programs operate in rural areas. Therefore, many care providers serving rural communities cannot participate in these programs, and thus do not receive financial incentives and comparative performance data that are provided through the programs for the purpose of spurring improvement. Moreover, rural patients and their families may not have access to publicly-reported performance results for many of their healthcare providers.

As CMS programs and policies evolve, however, more rural providers will be subject to CMS pay-for-performance (P4P) programs. For example, in 2015, only practices with 100 or more eligible professionals are included in the clinician Value-Based Payment Modifier program; however, this program will be extended to all fee-for-service Medicare clinicians by 2017. Although program expansion for non-PPS facilities is not imminent, the Affordable Care Act mandates a demonstration program to inform how typically-excluded facilities can participate in the Hospital Value-Based Purchasing program.

While some stakeholders desire the eventual participation of currently-excluded rural providers in CMS quality improvement programs, including P4P programs, the very rurality of these providers may pose significant measurement and design challenges for the various programs. These rural providers are influenced by both the geography and the culture of the areas and populations they serve. Regardless of the methodology used to define the rural population of the U.S., statistics indicate that those living in rural areas may be more disadvantaged overall than those in urban or suburban areas, particularly with respect to sociodemographic factors, health status and behaviors, and access to the healthcare delivery system. For example, people in rural areas are more likely than others to have lower incomes, lower educational attainment, higher unemployment rates, and higher rates of poverty. According to data from the 2014 Update of the Rural-Urban Chartbook, those in rural areas are, in general, more likely to

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However, it should be noted that rural areas are heterogeneous, and there may be substantial variation from one area to the next.


There is some indication, however, that relatively fewer of the "oldest old" (i.e., those 85 and older) live in rural areas. See MedPAC. Serving rural Medicare beneficiaries. In: Report to the Congress: Medicare and the Health Care Delivery System. Washington, DC: MedPac; 2012:115-137.
be older (i.e., ages 65 and above). They also are more likely to engage in riskier health behaviors, such as smoking among adolescents and adults and leisure-time physical inactivity, compared to those in other geographical areas, and have higher overall mortality in all age categories (i.e., children and young adults, working-age adults, and those 65 and older). Healthcare provider shortages as well as limited availability of other resources such as technological expertise and transportation networks in rural areas also affect how care is delivered (e.g., transfer of high-acuity patients to other facilities for specialty care). Moreover, many rural providers face challenges in quality measurement and associated accountability efforts because of low patient volume, which can impact the reliability and utility of performance metrics.

**NQF Rural Health Project**

In 2014, the Department of Health and Human Services (HHS) contracted with the National Quality Forum (NQF) to convene a multistakeholder Committee to make recommendations to address challenges in healthcare performance measurement (including low case-volume) for rural providers, particularly in the context of pay-for-performance.

Rural providers of interest for the project include:

- Critical Access Hospitals (CAHs)
- Rural Health Clinics (RHCs)
- Community Health Centers (CHCs)
- Small hospitals
- Small clinician practices
- Clinicians who serve in these settings

Several key characteristics of these providers are shown in Appendix A. In considering clinician-level measurement, the project will focus primarily on issues relevant to primary care.

As part of this effort, NQF conducted an environmental scan of measures and measurement efforts to help inform the Committee's deliberations.

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For the purposes of this project, rural areas are those designated as such by the Office of Rural Health Policy (ORHP) (HRSA. Defining the rural population website. Available at: [http://www.hrsa.gov/ruralhealth/policy/definition_of_rural.html. Last accessed January 2015.](http://www.hrsa.gov/ruralhealth/policy/definition_of_rural.html)). The ORHP designation of rural areas includes nonmetropolitan counties (as defined by the White House Office of Management and Budget), areas within metropolitan counties that are identified as rural using Rural-Urban Commuting Area (RUCA) codes, and several additional large census tracts with extremely low population density. This definition of rural captures approximately 85 percent of the U.S. and 18 percent of the U.S. population (roughly 57 million people).
Goals and Approach for Environmental Scan

The goals of the environmental scan were to:

- Identify performance measures and measurement programs that are being used to assess and influence rural providers
- Describe how these measures and programs are being used and validated to accurately reflect quality, cost, and/or resource use
- Describe providers’ responses to the identified measures and programs
- Identify and describe challenges and potential solutions for performance measurement for payment purposes
- Identify key measurement gaps

To inform the environmental scan, NQF reviewed:

- Publicly-available repositories of measures, including NQF’s portfolio of measures
- Measures under consideration for the 2014-2015 Measure Applications Partnership (MAP) pre-rulemaking recommendations
- Measures finalized for use in relevant federal quality improvement programs
- Relevant peer-reviewed and gray literature (see Appendix B for sources consulted)
- Input from NQF members and other key informants

Scan Results and Analysis

Rural Issues

Several issues regarding provision of healthcare in rural areas were identified during the scan, many of which can negatively influence quality measurement and/or improvement activities. These include:

- Limited availability of healthcare providers, including specialists and post-acute care providers (the latter may particularly impact cost of care)
- Limited emergency response options
- Geographic isolation, resulting in transportation issues that affect patient care and lack of involvement in quality improvement efforts (which can foster a sense of neglect)
- Limited hours of operation for many providers, including emergency physicians and pharmacists
- Patient characteristics, including sociodemographic factors, health status, and health behaviors
- Limited workforce capacity, particularly of those with specialized technological skills or quality improvement expertise
- Less predictable, and often low, patient volume
- Lack of financial resources to invest in HIT and quality improvement initiatives
- Heterogeneity of rural areas, resulting in heterogeneity between rural hospitals, clinics, and providers

While many of the issues listed above are not limited to rural providers only, they may be exacerbated in rural areas.
Quality Improvement Efforts

The scan identified many public and private quality improvement programs and initiatives directed towards hospitals and clinicians. Several of those most relevant to the project are described below.

Public Programs

CMS Medicare Quality Improvement Programs

To drive improvement in health and healthcare services, CMS administers a variety of quality improvement programs directed at various types of hospitals for various quality objectives (see Appendix C for additional program details). One of the earliest pay for reporting programs, the Hospital Inpatient Quality Reporting (IQR) Program, requires hospitals to report quality data on a set of quality measures to CMS, a subset of which are then publicly reported on the Hospital Compare website. Hospitals that fail to report quality data receive a reduction in their annual Medicare payment update. The Hospital Outpatient Quality Reporting (OQR) program is a similar pay-for-reporting program created to drive improvements in hospital outpatient services provided through outpatient clinics and emergency departments. As with the IQR program, a subset of measures used in OQR are reported on Hospital Compare. Through public reporting of quality data that shows how well providers render care, CMS aims to help consumers make more informed healthcare decisions and also encourages providers to improve the quality of care they provide. Although CAHs can voluntarily submit data for public reporting to the Hospital Compare program, they are excluded from the IQR and OQR programs because they are not paid under the Medicare’s hospital PPS. Small rural hospitals do participate in these programs but may be unable to report on certain measures due to low case-volume.

Over the years, CMS has been gradually shifting from pay-for-reporting to P4P for hospitals with the introduction of programs such as the Value-Based Purchasing (VBP) program, the Hospital-Acquired Condition (HAC) Reduction Program, and the Hospital Readmissions Reduction Program. To facilitate the transition to pay-for-performance and to reduce undue burden of reporting quality data through various federal programs, CMS has made efforts to align measures across the programs. For example, hospital VBP measures are selected from the IQR measure set and must be reported on the Hospital Compare website for at least one year before they are used in VBP. Again, because CAHs are not paid under Medicare’s hospital PPS, they are excluded from participation in the VBP program, and similarly, low case-volume may hinder full participation for small rural hospitals.

For clinicians, CMS instituted Physician Quality Reporting System (PQRS) to encourage reporting of quality measure results from physicians and other "eligible professionals" (e.g., physician assistants, nurse practitioners, certified nurse midwives, physical therapists, occupational therapists, etc.). PQRS was initially designed as a voluntary pay-for-reporting program in which clinicians could choose to report results from a large "menu" of measures applicable to both primary care providers and specialists. However, the PQRS has now transitioned such that CMS will soon begin applying "negative payment adjustments" to payments for those clinicians who do not report. Results from PRQS measures are being used for public reporting on the Physician Compare website. The newest CMS clinician-based quality program is the Physician Value-Based Payment Modifier (VBPM) program. This P4P program assesses both the quality and cost of care. Data from PQRS will be used for the quality component used in the VBPM program. Clinicians who work in RHCs and CHCs are not paid under the MPFS and are

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therefore excluded from these programs. Other rural clinicians who work in small or solo practices may also be unable to report on certain measures due to low case-volume.

To encourage use of electronic health records (EHRs), the Medicare and Medicaid EHR Incentive ("Meaningful Use") programs provide incentives to eligible professionals, eligible hospitals, and CAHs as they adopt, implement, upgrade, or demonstrate meaningful use of certified EHR technology. With these programs, CMS has endeavored to reduce the data collection burden on providers by aligning these programs with the IQR and PQRS programs to allow hospitals and clinicians to meet the requirements for both programs by submitting data electronically. Specifically, eligible professionals that satisfactorily report to PQRS using the EHR-based reporting option will also satisfy the Clinical Quality Measurement (CQM) component of the EHR Incentive program. Similarly, when hospitals voluntarily report a subset of IQR program quality measures using EHRs certified in the Medicare EHR Incentive Program, they receive credit in both programs.

Finally, CMS has created the Medicare Shared Savings Program (MSSP) to encourage coordination and cooperation among providers. Eligible providers, hospitals, and suppliers may participate in the MSSP by participating in an Accountable Care Organization (ACO). The MSSP will reward those ACOs that reduce their growth in healthcare costs while meeting performance standards on quality of care. Rural providers who participate in ACOs are included in this program.

CMS Quality Improvement Organizations

Under contract to CMS, Quality Improvement Organizations (QIOs) provide assistance in quality improvement to Medicare providers in various settings (e.g., hospitals, nursing facilities, clinician offices, etc.). QIOs help to improve care quality through education, outreach, sharing of best practices, offering technical assistance on data and measurement, and facilitating community collaboration and communication. Recent QIO activities for hospitals include patient safety efforts focusing on hospital-acquired infections (e.g., central line bloodstream infections, catheter-associated urinary tract infections, and surgical-site infections) and adverse drug events, and creating community coalitions that

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will help build capacity for improving care transitions. Additionally, some QIO activities have been specifically directed towards CAHs in an effort to help them use CMS data collection tools and report data to the Hospital Compare program. However, it is unclear the extent to which QIOs will continue work with rural providers, particularly given the transition of QIOs to a regional instead of a state-specific approach.

**Medicaid Program Efforts**

As required under the Children’s Health Insurance Program Reauthorization Act and the Affordable Care Act, core sets of healthcare quality measures for children and adults, respectively, have been developed to assess the quality of care provided to Medicaid beneficiaries at the program level. As part of the efforts, technical assistance in the collection and reporting of the core measures was provided to states. Currently, the reporting of these measures to CMS is voluntary.

Although not exclusively a Medicaid-driven effort, at least 43 states have adopted policies and programs to create patient-centered medical homes (PCMHs). The PCMH model is a primary care delivery model that provides accessible, comprehensive, ongoing and coordinated patient-centered care. Although the various programs measure quality in various ways, some work has been done to define a standard set of core cost and quality measures. Clinical measures suggested for this core set include several screening measures, measures focused on management of weight, cholesterol, blood pressure, and medications, overuse of imaging and antibiotics, diabetes care, and immunizations. Cost and resource use measures include the number of emergency department visits, admissions and readmissions, and per-member-per-month costs.

**MBQIP Program**

The Medicare Beneficiary Quality Improvement Project (MBQIP) was created under the Health Resources and Services Administration's (HRSA) Federal Office of Rural Health Policy (ORHP). The goal of the program is to assist CAHs in quality improvement efforts. Program participants voluntarily submit data on a set of quality measures and implement relevant quality improvement activities. A substantial majority of CAHs report on at least one measure, although there are regional differences in reporting rates and the bulk of reporting is for hospital inpatient (rather than outpatient) measures.

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Measures reported through the MBQIP program include:

- Inpatient pneumonia and heart failure measures
- Outpatient AMI, chest pain, surgical care, and HCAHPS measures
- Outpatient Emergency Department transfer communication measures and pharmacist CPOE/Verification of Medication Orders measures

**HRSA Telehealth Programs**

HRSA operates three grant programs aimed at increasing and improving the use of telehealth as a way to help meet the healthcare needs of underserved people. These include the:

- **Licensure Portability program.** This program provides facilities cooperation between state licensing boards so they can develop and implement policies that will reduce statutory and regulatory barriers to telemedicine.
- **Telehealth Network program.** This program, which currently supports 17 telehealth networks, facilitates human, technical, and financial capacity-building to develop sustainable telehealth programs and networks. These networks help expand and improve the quality of healthcare services, the training of healthcare providers, and the quality health information that is available to health care providers, patients, and their families.
- **Telehealth Resource Centers program.** This program facilitates establishment of Telehealth Resource Centers (TRCs); these centers provide technical assistance to healthcare organizations, networks, and providers as they implement cost-effective telehealth programs to serve rural and medically underserved areas and populations.

**Private Programs**

There is a proliferation of privately-sponsored quality improvement programs in existence. These include accreditation programs for hospitals, certification and/or recognitions programs for clinicians, and programs used by employer groups (i.e., purchasers) and insurers to monitor quality of care, define networks, and incent improvement (often through P4P initiatives). The commonality in such programs is the use of performance measures for decisionmaking and (sometimes) payment and thus potentially informative when considering performance measurement for rural providers (particularly those with small case volume). A few of these programs are described briefly below.°

**Accreditation, Certification, and Recognition Programs**

Many hospitals elect to be accredited by an outside entity (e.g., The Joint Commission). Hospitals that are not accredited must be certified by their State Survey Agencies in order to participate in Medicare or Medicaid. Clinicians often are certified (credentialed) by their respective practice organizations. The certification process demands a mastery of basic knowledge and skills in a particular practice area, as well as ongoing education. Some credentialing bodies also mandate engagement in quality assessment

° It is beyond the scope of this scan to identify and describe the myriad quality improvement programs currently operating in the U.S.
and improvement activities. Some clinicians (or programs) may also seek specialized recognition based on the quality of care provided (e.g., NCQA’s PCMH program and Diabetes Recognition Program; Aetna’s Aexcel program for specialists).

Pay-for-Performance Programs

According to a recent *Health Affairs* article, there are more than 40 private-sector P4P programs in operation in the U.S. Three illustrative examples include:

- **California Pay for Performance Program, administered by the Integrated Healthcare Association.** This program, which includes more than 200 physician organizations representing 25,000 physicians and 10 million commercial HMO/POS members, is the largest P4P program in the U.S. The program includes measures for various clinical domains (e.g., cardiovascular, maternity, diabetes, etc.), meaningful use of health IT, patient experience, and resource use (e.g., average length of stay, prescription of generic drugs, frequency of selected procedures, and total cost of care). Measure results are publicly reported. Providers who accept payment from the 10 participating commercial health plans are included in the program. However, a minimum of 30 patients are needed for the clinical quality measures included in the program.

- **Blue Cross Blue Shield of Michigan hospital P4P program.** This insurer has a separate program for small rural hospitals. Components of the program include administration of a patient safety culture survey as a pre-qualifying condition; community health activities, including providing a narrative that describes their community service initiatives, administration of at least four HCAHPS questions, and an attestation of how the hospital will use information to form partnerships with the provider community; reporting on four outpatient clinical quality indicators (aspirin at arrival, median time to ECG, median time from ED arrival to departure, time from door to diagnostic evaluation); and participation in at least two state quality initiatives.

- **Maryland’s Quality-Based Reimbursement (QBR) Program.** Maryland hospitals are not paid through the Medicare PPS and therefore the state’s Health Care Commission operates its own quality improvement program. This program adjusts hospital payments based on process measures for heart attack, heart failure, pneumonia, asthma, surgical infection prevention, and HCAHPS experience-of-care measures. The program requires at least 10 cases for the process measures and at least 100 cases for the HCAHPS measures, and hospitals need to be able to report at least 5 measures in order to be included in the program. Note that there are no CAHs in Maryland (but there are hospitals located in rural areas of the state).

Regional Quality Collaboratives

There are also many regional quality improvement programs in operation in the U.S. These often represent partnerships between employer groups, health plans, hospitals, physicians, state

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governments, and/or other stakeholders. There is wide variation between the programs as to whether rural and/or low-volume providers are included. Three illustrative examples include:

- **Massachusetts Health Quality Partners**: This program is limited to primary care practices with at least three physicians who have at least two measures with enough data to yield reliable results. Quality measures include HEDIS measures and a statewide patient experience survey.

- **Minnesota Community Measurement (MNCM)**. This nonprofit organization collects and reports quality performance data, develops healthcare performance measures, and assists clinicians in PQRS and registry reporting. Per Minnesota’s 2008 health reform law, all hospitals (including CAHs), clinics, ambulatory service centers, and physicians are required to submit data to MNCM for a set of core measures, the results of which are then publicly reported.

- **California Cooperative Healthcare Reporting Initiative**. The goal of this initiative is to measure the quality and affordability of care, report performance ratings to and educate the public about healthcare value, and drive improvements in California healthcare delivery. The program measures physicians, groups, hospitals, and service areas. Data for hospitals are limited to those with publicly available information.

**Feedback on Program Structure**

During conversations regarding quality improvement and measurement with key informants from two large health plans, a Medicaid program, and a rural employer representative, the following observations were noted:

- State regulations can impact which measures are used in programs.
- The low case-volume problem is known and understood. One method used to interpret results is to “compare like to like” so that providers with similar patient volume or mix are compared.
- It is difficult for large insurers with limited market share in rural areas to use common quality metrics to assess rural providers because even if those providers have a large practice, patient volume for that insurer may be low. Instead, these insurers may use structural measures (e.g., recognition by NCQA or Bridges to Excellence) to assess providers. Low patient volume for rural providers does not, however, preclude insurers’ ability to provide data on performance to providers.
- There is a perception that employers in rural areas (who are generally small) are not paying attention to quality measurement results.
- NQF-endorsed measures often are used, but may be modified in some way (e.g., instead of conforming to the diabetes measure of HbA1c control as < 8 percent, providers are allowed to choose their own target levels). Sometimes “home-grown” measures are used in programs because of unavailability of NQF-endorsed measures that can inform specific program objectives.
Performance Measures

A total of 1,265 hospital-and clinician-level performance measures were identified in the environmental scan. The measures were tagged in various ways to facilitate Committee discussion, including:

- Use in various Federal quality improvement programs
- Rural relevancy
- Selected condition or topic areas

A spreadsheet of the measure scan results includes the above fields, as well as other information about the measure such as the description, numerator, denominator, exclusions, type, and level of analysis. This spreadsheet is posted on NQF’s public website. Note that some measures are specified for multiple levels of analysis.

The number of measures included in relevant federal quality improvement programs (according to the most recent finalized rules) is shown in Table 1.

Table 1. Measures in Federal Quality Improvement Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of measures</th>
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<tbody>
<tr>
<td>Hospital Inpatient Quality Reporting (IQR)</td>
<td>74</td>
</tr>
<tr>
<td>Hospital Outpatient Quality Reporting (OQR)</td>
<td>25</td>
</tr>
<tr>
<td>Hospital Compare</td>
<td>101</td>
</tr>
<tr>
<td>Hospital Acquired Condition Reduction Program</td>
<td>6</td>
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<tr>
<td>Hospital Readmission Reduction Program</td>
<td>5</td>
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<tr>
<td>Hospital Value-Based Purchasing (VBP)</td>
<td>25</td>
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<tr>
<td>Meaningful Use – Hospitals, CAHs</td>
<td>29</td>
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<tr>
<td>Meaningful Use – Eligible Professionals</td>
<td>64</td>
</tr>
<tr>
<td>Physician Quality Reporting System (PQRS)</td>
<td>254</td>
</tr>
<tr>
<td>Physician Compare</td>
<td>21</td>
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<tr>
<td>Value-Based Physician Modifier (VBPM)</td>
<td>290</td>
</tr>
<tr>
<td>Medicare Shared Savings Program</td>
<td>28</td>
</tr>
<tr>
<td>Adult Medicaid Core Set</td>
<td>26</td>
</tr>
<tr>
<td>Child Medicaid Core Set</td>
<td>26</td>
</tr>
</tbody>
</table>

Rural Relevancy

Previous research efforts funded under HRSA’s ORHP have identified rural-relevant measures for small hospitals, CAHs, and rural health clinics. Counts of these measures by setting are shown in Table 2.

Some effort was made by NQF staff to delete duplicate measures from the measure scan; however, due to retrieval of measures from various sources, identification of duplicates was not straightforward, and duplicates still exist. Also, the tagging of measures to condition/topic areas was somewhat arbitrary, although staff tried to be consistent in the decisionmaking process.
<table>
<thead>
<tr>
<th>Measurement setting</th>
<th>Number of measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small hospitals*</td>
<td>20</td>
</tr>
<tr>
<td>CAH inpatient**</td>
<td>51</td>
</tr>
<tr>
<td>CAH outpatient</td>
<td>18</td>
</tr>
<tr>
<td>RHCs</td>
<td>18</td>
</tr>
</tbody>
</table>

*Fewer than 50 beds
**In 2011, 27 of these were considered ready for reporting

**Rural-Relevant Measures for Small Hospitals**

In 2004, a team of experts in rural healthcare, rural hospitals, and quality measurement reviewed and rated several healthcare quality performance measures commonly used by rural hospitals. The product of this effort was a list of 20 measures considered to be relevant for small rural hospitals. These measures focused on AMI, heart failure, pneumonia, maternity, and trauma patients as well as surgical antibiotic prophylaxis, medication safety, and advance care planning.

The expert panel identified the following gaps in measurement:

- Measures that capture rural hospitals' initial contact, triage, and transfer functions. Potential measures should reflect availability and use of protocols for treatment vs. transfer, processes for patient stabilization and transportation, and measures of care coordination with other hospitals and providers.
- Measures that capture linkages with communities. Potential measures could reflect the appropriateness of information transfer with other community providers (e.g., local health department or nursing facility) and care integration with other local providers.

**Rural-Relevant Measures for CAHs**

As an update to the work on rural-relevant measures for small hospitals described above, in 2010, researchers began evaluating new and existing quality performance measures to identify rural-relevant measures that are appropriate for CAHs for both inpatient and outpatient settings. Based on these
efforts, measures considered by the convened expert panel to be rural-relevant and appropriate for public reporting by CAHs focus on the following topic areas:

- Pneumonia
- Heart failure
- AMI
- Stroke
- Venous Thromboembolism
- Healthcare-associated infections
- Perinatal/Maternity
- Vaccination (influenza; pneumonia)
- Tobacco use screening
- Care transitions
- Patient experience (derived from HCAHPS)
- Emergency department (timeliness, communications)
- Surgical care (antibiotic prophylaxis)

The expert panel identified the following gaps in measurement:

- Medication safety
- Surgical checklist\(^r\)
- Medication reconciliation
- Advance care planning

**Rural-Relevant Measures for RHCs**

Ongoing efforts begun in 2012 by the Maine Rural Health Research Center have identified a set of 18 quality measures relevant for RHCs (5 core, 13 optional). Beginning with 262 measures focused on primary care, Center staff, in conjunction with other stakeholders, pared down the initial list to 57 measures for a more intensive review. To select this measure set, the study team used a simplified version of NQF’s standard evaluation criteria (importance to measure, opportunity for improvement, feasibility, usability, and scientific acceptability), along with consideration of the typical primary care services provided in RHCs, consistency of selected measures with other measures of primary care to allow for comparison, and the potential of the RHC to collect measure data and improve performance. The core measures address the following clinical areas: blood pressure control, tobacco cessation, childhood immunization, blood glucose control among diabetic patients, and documentation of current medications. Optional measures address body mass index, blood pressure and cholesterol control, asthma, and other immunizations.

\(^r\) A safe surgery checklist measure for ambulatory surgery centers is available but has not been submitted to NQF.
Additional Measurement Gaps

In addition to the measurement gaps noted above, examination of the measures compiled in the scan reveal a lack of patient-reported outcome measures that assess shared decisionmaking and care coordination measures that reflect telemedicine options.

Provider Perceptions

NQF staff was able to locate only one report describing perceptions of rural providers regarding current quality improvement programs or measures. Specifically, a report of an evaluation of the California Pay for Performance Program (administered by the Integrated Healthcare Association and briefly described above) for the 2006-2009 measurement years found widespread support for the program overall among its participating clinicians. Participants reported increased engagement in and focus on quality improvement activities and satisfaction with the reasonableness of the measures used in the program. The evaluation did not, however, stratify results by clinician type or location, so it is unknown if the perceptions gleaned in the evaluation reflected those of rural providers.

Initial feedback from informants to this project suggests that rural providers are being assessed on both utilization and quality for the purposes of pay-for-performance and that the quality measures used do reflect the quality of care provided and help to drive improvement in the areas measured. However, there is concern that the costs involved (e.g., data collection and management) outweigh the P4P incentives provided and that the associated opportunity costs can have a negative impact on overall patient care. Specific concerns with the measures include low case-volume and inapplicability of certain measures because targeted services are not provided.

Measurement Challenges and Potential Solutions

Service Provision

Many small hospitals and CAHs do not offer a full suite of healthcare services (e.g., they may not admit heart attack patients) and thus certain measures used in many quality improvement programs may not be applicable to them. Yet some quality improvement programs may require reporting on a mandatory set of measures, some of which may not be applicable to small hospitals and CAHs. In such cases, more weight (e.g., in P4P incentive calculations) is placed on certain measures for certain providers than for others who offer a wider variety of services.

Potential solutions suggested by various stakeholders include:

- Limit core sets of measures to those applicable to all providers and/or construct programs so as not to “penalize” providers when core-set measures are not applicable

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• Develop and use measures that are specifically suited to small rural hospitals and CAHs (e.g., measures related to transfer, telemedicine, staffing, timeliness of care, etc.)

**Low Case-Volume**

Many rural providers do not have enough patients to achieve reliable and valid measurement results. This may be particularly true for certain condition-specific measures and/or providers in frontier areas.

Potential solutions that have been identified in the literature include:

• Selecting measures (particularly for P4P programs) that are broadly applicable to large numbers of patients (e.g., screening measures)
• Pooling data across several years (e.g., using three years of data rather than just one year)
• Aggregating data from multiple providers (e.g., combining data within regions or networks)
• Combining inpatient and outpatient data for similar measures
• Developing composite measures that expand the number of patients captured by measurement
• Presenting confidence intervals, numerator counts, and denominator counts
• Using indicators that do not have a denominator (e.g., number of infections per month; time since last adverse event)\(^1\)
• Sophisticated statistical approaches such as hierarchical modeling (i.e., shrinkage estimates)
• Stratify providers so that performance results are compared only among similar groups

\(^1\) This approach can be used for internal quality improvement efforts when patient populations/conditions are stable but typically would not be appropriate when comparing to other providers.
### Appendix A. Key Characteristics of Providers of Interest for the NQF Rural Health Project

<table>
<thead>
<tr>
<th>Provider</th>
<th>Key Characteristics</th>
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| Critical Access Hospitals (CAHs)\(^u\) | • ≤ 25 inpatient beds  
• Emergency care 24 hours/day, 7 days/week  
• Geographical service locations: Rural only; ≥ 35 miles from other hospitals or CAHs  
• Issues with low case volume: Yes |
| Rural Health Clinics (RHCs)\(^v\)    | • Staffed by a nurse practitioner, physician assistant, or certified nurse-midwife at least half time  
• Offers outpatient primary care services, basic laboratory services, and visiting nurse services to homebound patients  
• Geographical service locations: Non-urbanized areas with healthcare shortage designations  
• Issues with low case volume: Not necessarily |
| Community Health Centers (CHCs)\(^w\) | • One type of Federally Qualified Health Center  
• Offers services to Medically Underserved Populations and/or in Medically Underserved Areas  
• Offers primary and preventive care services for all age groups, as well as transportation, home visitation, translation, case management, and health education  
• Geographical service locations: Both urban and rural; 49 percent of FQHCs are located in rural or frontier areas (i.e., sparsely populated rural areas that are isolated from population centers and services)  
• Issues with low case volume: Not necessarily |
| Small hospitals                      | • For the purposes of this project, small hospitals are defined as those with <50 beds                                                                                                                                 |
| Small clinician practices            | • For the purposes of this project, small clinician practices are defined as those with <10 eligible professionals                                                                                                                                 |
| CAH, RHC, CHC clinicians             | • Includes physicians, nurse practitioners, physician assistants, nurses, dentists, pharmacists, mental health specialists, etc.  
  o Geographical service location: Both urban and rural  
• Issues with low case volume: Not necessarily |
| Small hospital and small practice clinicians | • For the purposes of this project, clinicians who work in hospitals with <50 beds or in practices with <10 eligible professionals                                                                 |

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Appendix B. Resources Consulted

For this environmental scan, NQF consulted the information sources below.

NQF Resources

- NQF’s portfolio of endorsed measures.

HHS Resources

- AHRQ. Patient Centered Medical Home Resource Center.
- AHRQ. Rural Health Research Activities.
- Centers for Medicare & Medicaid Services (CMS). Fee-For-Service Physician Feedback Program/Value-Based Payment Modifier Background.
- CMS. Name and Address Listing for Rural Health Clinics (RHCs).
- CMS. Physician Quality Reporting System (PQRS) List of Eligible Professionals.
- CMS. Press release: CMS launches next phase of new Quality Improvement Program.
- CMS. Quality improvement Organizations.
- CMS. Rural Health Clinics Center.
- Health Resources and Services Administration (HRSA). Rural Health.
- HRSA. National Advisory Committee on Rural Health and Human Services.
- HRSA. Quality Toolkit.
- HRSA. Rural Health Center.
- HRSA. Rural Health Clinics.
- HRSA. Telehealth.

Other Web Resources

- AHA. Statistics and Studies.
- Appalachian Regional Commission (ARC).
- Arkansas Health Care Payment Improvement Initiative.
- Blue Cross Blue Shield of Michigan. Hospital Pay-for-Performance Programs website.
- California Healthcare Performance Information System (CHPI).
• Health Care Incentives Improvement Institute (HCI3). Bridges to Excellence website.
• Federation of American Hospitals (FAH). Hospital Quality Alliance website.
• Health Affairs Blog. Arkansas Payment Improvement Initiative website.
• Massachusetts Health Quality Partners (MHQP).
• Minnesota Community Measurement. Measure Up to Better Health website.
• National Association of Community Health Centers (NACHC).
• National Association of Rural Health Clinics (NARHC).
• National Center for Frontier Communities (NCFC).
• National Rural Health Resource Center (NRHRC). Medicare Beneficiary Quality Improvement Project.
• Rural Assistance Center (RAC). Resources and Strategies to Improve Rural Health and Human Services.
• RAC. Finding Statistics and Data Related to Rural Health.
• Rural Health Research Gateway. Rural Health Research.
• The Joint Commission (TJC). Core Measure Sets.
• United States Department of Agriculture (USDA). Health Information for Rural Health Providers.
• USDA. What is rural?
• USDA. Rural Classifications.
• USDA. ERS Rural-Urban Continuum Codes.
Published Documents


Appendix C. CMS Quality Improvement Programs

Hospital Programs

_Inpatient Quality Reporting Program_

The Inpatient Quality Reporting (IQR) program is a pay-for-reporting and public reporting program that authorizes CMS to pay hospitals a higher annual update to their payment rates if they successfully report designated quality measures. This program was authorized by the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 which required a 0.4 percentage point reduction in the annual market basket update for hospitals that did not successfully report. The Deficit Reduction Act of 2005 increased that reduction to 2.0 percentage points. Some of the hospital quality-of-care information gathered through the program is available to consumers on the Hospital Compare website.\(^x\)

_Hospital Compare_

Hospital Compare website provides information on how well hospitals provide recommended care to their patients to help consumers make more informed healthcare decisions about where to receive healthcare. Hospital Compare allows consumers to select multiple hospitals and directly compare performance measure information related to heart attack, heart failure, pneumonia, surgery, and other conditions. These results are organized by patient survey results, timely and effective care, readmissions, complications, deaths, use of medical imaging, linking quality to payment, and Medicare volume.\(^y\)

_Hospital Value-Based Purchasing Program_

The Hospital Value-Based Purchasing (VBP) program is a P4P program that aims to improve healthcare quality by providing incentive payments to hospitals that meet or exceed performance standards. Medicare bases a portion of hospital reimbursement on performance through the Hospital VBP. Medicare withholds a portion of its regular hospital reimbursements from all hospitals paid under its inpatient prospective payment system (IPPS) to fund a pool of VBP incentive payments. The amount withheld from reimbursements increases over time from 1.5 percent in fiscal year (FY) 2015, to 1.75 percent in FY 2016, to 2 percent in FY 2017 and future fiscal years. Hospitals are scored based on their performance on each measure within the program relative to other hospitals, as well as on how their performance on each measure has improved over time. The higher of these scores on each measure is used in determining incentive payments. Measures selected for the VBP program must be included in


IQR and reported on the Hospital Compare website for at least one year prior to use in the VBP program.²

**Hospital Acquired Condition Reduction Program**

The Hospital Acquired Condition (HAC) Reduction program is a P4P and public reporting program that supports the broader public health imperative to raise awareness and reduce the incidences of preventable HACs by applying evidence-based clinical guidelines. Beginning in FY 2015, the hospital-acquired condition (HAC) reduction program, mandated by the Affordable Care Act, requires the Centers for Medicare & Medicaid Services (CMS) to reduce hospital payments by 1 percent for hospitals that rank among the lowest-performing 25 percent with regard to HACs. The purpose of this program is to drive improvement for the care of Medicare beneficiaries, but also privately insured and Medicaid patients, through spill-over benefits of improved care processes within hospitals.³⁴

**Hospital Readmissions Reduction Program**

The Hospital Readmissions Reduction program is a pay-for-performance and public reporting program aimed at reducing hospital readmissions for more than three-quarters of U.S. hospitals paid under the inpatient prospective payment system (IPPS). The risk-adjusted readmissions rates are publicly reported on the CMS Hospital Compare website to provide consumers with hospital performance information. Furthermore, the incentive structure has been designed so that diagnosis-related group (DRG) payment rates will be reduced based on a hospital’s ratio of actual to expected readmissions. The maximum payment reduction until October 2015 is 2 percent, after which the payment reduction will be capped at 3 percent.³⁵

**Hospital Outpatient Quality Reporting Program**

The Hospital Outpatient Quality Reporting (OQR) program is a pay-for-reporting program with performance information reported on the Hospital Compare website. Under the Hospital OQR Program, hospitals must meet administrative, data collection and submission, validation, and publication requirements or receive a 2 percentage point reduction in their annual payment update (APU) under the Outpatient Prospective Payment System (OPPS). The goals of the program are to establish a system for

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collecting and reporting on quality performance of hospitals that offer outpatient services such as clinical visits, emergency department visits, and critical care services.\textsuperscript{cc}

\textit{Ambulatory Surgery Center Quality Reporting Program}

The Ambulatory Surgical Center Quality Reporting (ASCQR) program is a pay-for-reporting program with performance information currently reported to CMS. The performance information is expected to be publicly available in the future. The goals of this program are to promote higher quality and more efficient care for Medicare beneficiaries, to establish a system for collecting and reporting on quality performance of ASCs, and to provide consumers with quality-of-care information that will help them make informed decisions about their healthcare.\textsuperscript{dd}

\textit{Medicare and Medicaid EHR Incentive Program for Hospitals and CAHs}

The Medicare and Medicaid EHR Incentive ("Meaningful Use") program provides incentives to eligible professionals, eligible hospitals, and CAHs as they adopt, implement, upgrade, or demonstrate meaningful use of certified EHR technology. The goal of this program is to promote the widespread adoption of certified EHR technology by providers and to incentivize the “meaningful use” of EHRs to improve quality, safety, efficiency, and reduce health disparities, engage patients and their families, improve care coordination, and maintain privacy and security of patient health information. The program defines three main components of meaningful use: the use of a certified EHR in a meaningful manner, such as e-prescribing, the use of certified EHR technology for electronic exchange of health information to improve quality of healthcare, and the use of certified EHR technology to submit clinical quality and other measures.

For the Medicare EHR Incentive Program for Hospitals, incentive payments began in 2011 and are comprised of an Initial Amount, Medicare Share, and Transition Factor. Alternatively, the CAH EHR Incentive payment is based on a formula for Allowable Costs and the Medicare Share. The Medicaid Incentive Program includes an Overall EHR Amount and Medicaid Share. Medicare payment penalties will take effect in 2015 for providers who are eligible but do not participate. However, payment penalties do not apply to Medicaid.

The Meaningful Use Program will be implemented in three stages. Each stage requires hospitals to meet objectives and to report clinical quality measures (CQMs). Stage 1, which began in 2011-12, set a goal of demonstrating data capture and sharing. To meet stage 1 requirements, eligible facilities must report on all 15 total clinical quality measures, meet 14 core objectives, and 5 objectives from a menu set of 10. For stage 2, which began in 2014, the goals are to advance clinical processes. In stage 2, hospitals must

\textsuperscript{cc} CMS.gov. Hospital outpatient quality reporting program website. Available at http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalOutpatientQualityReportingProgram.html. Last accessed January 2015.

meet 16 core objectives and 3 objectives from a menu set of 6 and report on 16 clinical quality measures that cover 3 of the National Quality Strategy domains. Measures are selected from a set of 29 clinical quality measures that includes the 15 measures from stage 1. Stage 3 will aim to improve outcomes. The required objectives and measures will be announced in an upcoming rulemaking process.**

**Clinic Programs**

*Physician Quality Reporting System (PQRS)*

PQRS is a reporting program that uses a combination of incentive payments and payment adjustments to promote reporting of quality information by eligible professionals (EPs) who satisfactorily report data on quality measures for covered Physician Fee Schedule (PFS) services furnished to Medicare Part B Fee-for-Service (FFS) beneficiaries. Now in its eighth year PQRS has finalized 285 measures in the 2015 Physician Fee Schedule final rule. All PQRS measures will be used for public reporting on Physician Compare and for the quality component of the Value-Based Payment Modifier.**

*Physician Compare*

Physician Compare is the federal website that reports information on physicians and other clinicians. The purpose of the website is public reporting of information and quality measures that are meaningful to patients. The website was launched on December 30, 2010, providing information about Medicare physicians and other healthcare professionals including an indication of participation in Physician Quality Reporting System (PQRS). Public reporting of performance measure results is being employed via a phased approach. In February 2014, the first set of measure data were posted on Physician Compare. These data included a subset of the 2012 Physician Quality Reporting System (PQRS) Group Practice Reporting Option (GPRO) Diabetes Mellitus (DM) and Coronary Artery Disease (CAD) measures for the 66 group practices and 141 Accountable Care Organizations (ACOs) that successfully reported via the Web Interface. In late 2014, a similar subset of 2013 group-level measures will be reported. In 2015, the first individual eligible professional-level measures available for public reporting will be a subset of 20 2014 PQRS measures and measures from the Cardiovascular Prevention measures group in support of the Million Hearts campaign.**

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Physician Value-Based Payment Modifier

Value-Based Payment Modifier assesses both quality of care furnished and the cost of that care under the Medicare Physician Fee Schedule. High-quality and/or low-cost groups can qualify for upward adjustments. Low-quality and/or high-cost groups and groups that fail to satisfactorily report PQRS are subject to downward adjustments.

The Physician Value-Based Payment Modifier is being phased in over the three years 2015-2017:

- CY 2015: Value Modifier (VM) will apply to physicians in groups with 100 or more eligible professionals (EPs) based on 2013 performance.
- CY 2016: VM will apply to physicians in groups with 10 or more EPs based on 2014 performance.
- CY 2017: VM will apply to physician solo practitioners and physicians in groups with 2 or more EPs based on 2015 performance. An estimated 900,000 physicians will be affected.
- CY 2018: VM will apply to physicians and nonphysician EPs who are solo practitioners or are in groups with 2 or more EPs based on 2016 performance.

Medicare and Medicaid EHR Incentive Programs

The Medicare and Medicaid Electronic Health Care Record (EHR) Incentive Programs provide incentive payments to eligible professionals (EPs), eligible hospitals, and critical access hospitals (CAHs) as they adopt, implement, upgrade, or demonstrate meaningful use of certified EHR technology. The programs promote widespread adoption of certified EHR technology by providers and incentivize “meaningful use” of EHRs to improve quality, safety, efficiency, and reduce health disparities; engage patients and family; improve care coordination, and population and public health; and maintain privacy and security of patient health information. As of September 2014, more than 414,000 healthcare providers received payment for participating in the Medicare and Medicaid Electronic Health Record (EHR) Incentive Programs. The incentive structure varies by program:

- Medicare: The last year to begin the program is 2014. Penalties take effect in 2015 and in each year hereafter where EPs are eligible but do not participate.
- Medicaid: The last year to begin the program is in 2016. Payment adjustments do not apply to Medicaid.

The programs align with the PQRS program to allow individual EPs and groups to report electronic clinical quality measures or “eCQMs” through PQRS portal. The programs also allow groups to report eCQMs through Pioneer ACO participation or Comprehensive Primary Care Initiative participation.

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hh CMS. gov. Value-based payment modifier website. Available at [http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html](http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html). Last accessed January 2015.

Programs for Accountable Care Organizations

Shared Savings Program

Medicare Shared Savings Program (Shared Savings Program) aims to facilitate coordination and cooperation among providers to improve the quality of care for Medicare Fee-For-Service (FFS) beneficiaries and reduce unnecessary costs. Eligible providers, hospitals, and suppliers may participate in the Shared Savings Program by creating or participating in an Accountable Care Organization (ACO). The Shared Savings Program is designed to improve beneficiary outcomes and increase value of care by:

- Promoting accountability for the care of Medicare FFS beneficiaries
- Requiring coordinated care for all services provided under Medicare FFS
- Encouraging investment in infrastructure and redesigned care processes

The Shared Savings Program will reward ACOs that lower their growth in healthcare costs while meeting performance standards on quality of care and putting patients first. Participation in an ACO is purely voluntary.\(^{\text{ii}}\)
