NATIONAL QUALITY FORUM

Performance Measurement for Rural Low-Volume Providers

Draft Report for Comment

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Contents

Executive Summary

Providers in rural areas face a number of challenges when it comes to delivery of healthcare in general and in performance measurement and quality improvement in particular. Rural areas are incredibly diverse: many are relatively close to urban or suburban areas, while others are relatively far, and others quite remote. Geographically isolated rural areas typically have relatively fewer healthcare settings and providers than non-isolated areas, and may have lack of information technology capabilities and difficulties due to transportation. Those who serve in small rural hospitals and clinician practices typically have multiple, disparate responsibilities claiming their time and attention (e.g., direct patient care, business and operational responsibilities), and consequently, often have limited time, staff, and/or finances available for quality improvement activities. Many rural areas also have a disproportionate number of vulnerable residents (e.g., economic or other social disadvantages, those in poor health, and those with poor health behaviors). This heterogeneity has particular implications for healthcare performance measurement, including limited applicability of measures that are appropriate for non-rural areas. Moreover, rural providers often may not have enough patients to achieve reliable and valid performance measurement results. While many of these challenges are not necessarily limited to rural areas, their impact on quality measurement and improvement likely is exacerbated in rural areas.

Although rural hospitals and clinicians do participate in a variety of private-sector, state, and federal quality measurement and improvement efforts, many Centers for Medicare & Medicaid Services (CMS) quality initiatives systematically exclude rural hospitals and clinicians from participation because they are paid differently than other providers. This exclusion may impact their ability to identify and address opportunities for improvement in care and result in a lack of easily-accessible information about provider performance for rural residents. Moreover, exclusion of rural providers from the CMS quality programs prevents rural providers from earning payment incentives that are open to non-rural providers.

Given the recent legislative actions by Congress and the Department of Health and Human Services' (HHS) accelerated timeframe for achieving value-driven healthcare (i.e., paying providers based on quality and cost rather than on quantity), it is now even more essential to integrate rural providers into Medicare quality improvement programs.

In 2014, HHS tasked the National Quality Forum to convene a multistakeholder Committee to identify challenges in healthcare performance measurement for rural providers and to make recommendations for mitigating these challenges, particularly in the context of CMS pay-for-performance programs. The specific objectives of this project are to:

- Make recommendations regarding measures appropriate for use in CMS pay-for-performance programs for rural hospitals and clinicians
- Make recommendations to help mitigate measurement challenges for rural providers, including the low-case volume challenge
- Identify measurement gaps for rural hospitals and clinicians

Providers of interest for the project include Critical Access Hospitals (CAHs), Rural Health Clinics (RHCs), Community Health Centers (CHCs), small rural hospitals, small rural clinical practices, and the clinicians who serve in these settings.

In addressing the objectives of this project, the 20-member Committee made the following recommendations:

- Make participation in CMS quality improvement programs mandatory for all rural providers but allow a phased approach for full participation across program types
- Use measures for rural providers that explicitly address low case-volume
- Use guiding principles for selecting quality measures that are relevant for rural providers
- Use a core set of measures, along with a menu of optional measures for rural providers
- Consider measures that are used in Patient-Centered Medical Home models
- Consider rural-relevant sociodemographic factors in risk adjustment
- Create a MAP workgroup to advise CMS on the selection of rural-relevant measures
- Pursue continued alignment of measurement efforts for rural providers
- Fund development of rural-relevant measures. The Committee identified the following topic areas as some of the most impactful for rural providers at this time:
    - Patient hand-offs and transitions
    - Alcohol/drug treatment
    - Telehealth/telemedicine
    - Access to care and timeliness of care
    - Cost
    - Population health at the geographic level
    - Advance directives/end-of-life
- For rural providers, create payment programs that include incentive payments, but not penalties
- Offer rewards for rural providers based on achievement or improvement
- Encourage voluntary groupings of rural providers for payment incentive purposes
- Fund additional work to consider how peer groups for rural providers should be defined and used for comparison purposes
- When creating and using composite measures, ensure that the component measures are appropriate for rural (particularly low-volume) providers

Lastly, the Committee provided additional recommendations that would benefit other quality measurement and improvement efforts for both rural and non-rural providers:

- Relax requirements for use of vendors in administering Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys and/or offer alternative data collection mechanisms
- Facilitate quicker and broader access to performance scores and to Medicare data for quality improvement purposes
- Facilitate inclusion of CMS data into all-payer databases

Many of the above recommendations are applicable not only to CMS quality improvement initiatives, but also to efforts of other stakeholders, including various public- and private-sector entities.

Project Overview

Healthcare performance measures increasingly are being used by both public and private purchasers and insurers for various types of accountability applications, including accreditation, network inclusion/exclusion, public reporting, and payment incentive programs. For those providing care in rural areas, however, participation in performance measurement and improvement efforts may be especially challenging. Although rural hospitals and clinicians do participate in a variety of private-sector, state, and federal quality measurement and improvement efforts, many Centers for Medicare & Medicaid Services (CMS) quality initiatives systematically exclude rural hospitals and clinicians from participation.

In 2014, the Department of Health and Human Services (HHS) contracted with the National Quality Forum (NQF) to convene a multistakeholder Committee to identify challenges in healthcare performance measurement for rural providers and to make recommendations for mitigating these challenges, particularly in the context of pay-for-performance programs operated by CMS.

Background and Context

With the publication of the Institute of Medicine's (IOM'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 performance 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.[a] 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 the quality of care delivered to patients and their families, and ultimately, to improve their health. Performance measurement results are used for a variety of purposes, including:

[a] Robert Wood Johnson Foundation (RWJF). *What is the National Quality Strategy?* Princeton, NJ:RWJF; 2012.

- 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
- healthcare network inclusion, exclusion, or tiering decisions
- various types of payment incentive programs by both public and private payers

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.[b] Earlier programs have run the gamut from encouraging voluntary participation in reporting performance results to CMS (often through financial incentives) to publicly reporting quality measure results to applying negative payment adjustments (i.e., "penalties") if results are not reported. More recently, programs created under the Affordable Care Act have instituted payment adjustments, including bonuses and sometimes penalties, based on results of both quality and cost measures (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 facilities that are not paid through the Inpatient Prospective Payment System (IPPS). 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]). Moreover, those hospitals and clinicians that do not meet requirements for a minimum number of cases may not be able to participate fully in the various CMS programs (for example, their results would not be publicly reported).

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 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, it is likely that many more rural providers will be subject to CMS pay-for-performance (P4P) programs. For example, although program expansion for non-prospective payment system (PPS) hospitals 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 (HVBP) program. Also, under current rule, only physicians in practices with 100 or more eligible professionals are included in the Value-Based Payment Modifier (VBPM) program for 2015; however, this program will be extended to all fee-for-service Medicare clinicians (both physicians and non-physicians) by 2018.

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[b] Goodrich K, Garcia E Conway PH. A history of and a vision for CMS quality measurement programs. *Jt Comm J Qual Patient Saf*. 2012; 38(10):465-470.

In January of 2015, HHS unveiled its goals and a timeline for "rewarding value" rather than volume. Specifically, it aims to have 30 percent of Medicare payments in alternative payment models (e.g., Accountable Care Organizations (ACOs), primary care medical home (PCMH) models, bundled payment arrangements) by the end of 2016 (50 percent by the end of 2018) and to link 85 percent of Medicare fee-for-service payments to quality by 2016 (90 percent by 2018) through programs such as the HVBP and the Hospital Readmissions Reduction Program.

In April of 2015, Congress passed the Medicare Access and CHIP Reauthorization Act (MACRA), which repealed the Medicare's Sustainable Growth Rate formula (created to contain the growth of Medicare spending on physician services). Beginning in 2019, physicians and other eligible professionals will participate in one of two payment pathways:

- *Merit Based Incentive Payment System (MIPS*), which will adjust fee-for-service payments with a bonus or penalty, depending performance on quality, resource use, clinical practice improvement activities, and meaningful use of electronic health record systems. This program will consolidate the current Physician Quality Reporting System (PQRS), Value-Based Payment Modifier (VBPM), and Meaningful Use programs
- *Alternative Payment Model (APM*), which will provide bonus payments for clinicians who participate in a qualified APM in which providers will take on substantial financial risk

It is unclear at this time the extent to which these two new policy changes will affect rural providers.

While many 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.,[c] 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.[d] 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.[e] According to data

[c] Depending on the definition, as few as 10 percent, or as many as 28 percent, of Americans live in rural areas. See: Hart LG, Larson EH Lishner DM. Rural definitions for health policy and research. *Am J Public Health*. 2005; 95(7), 1149-1155. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449333/pdf/0951149.pdf; Last accessed January 2015. Crosby RA, Wendel ML, Vanderpool RC, et al. *Rural Populations and Health: Determinants, Disparities, and Solutions*. San Francisco, CA: John Wiley & Sons; 2012.

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

[e] U.S. Department of Agriculture State Fact Sheets website. Available at http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx?StateFIPS=00. Last accessed January 2015.

from the *2014 Update of the Rural-Urban Chartbook,*[f] those in rural areas are, in general, more likely to be older (i.e., ages 65 and above).[g] Rural residents also are more likely to engage in certain riskier health behaviors, such as smoking among adolescents and adults and leisure-time physical inactivity, and have higher overall mortality in all age categories (i.e., children and young adults, working-age adults, and those 65 and older), compared to those in other geographical areas. 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, validity, and utility of performance metrics.

Project Objectives and Approach

The specific objectives of this project are to:

- Make recommendations regarding measures appropriate for use in CMS pay-for-performance programs for rural hospitals and clinicians
- Make recommendations to help mitigate measurement challenges for rural providers, including the low-case volume challenge
- Identify measurement gaps for rural hospitals and clinicians

Providers of interest for the project include[h]:

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

[f] 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..

[g] 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.

[h] A glossary of terms that provides definitions for these providers, as well as other terms used throughout this report, is included in Appendix A.

NQF convened a 20-member multistakeholder Committee to accomplish the purpose and objectives of the project. Committee members were appointed based on their expertise and experience in statistical methodology, delivery of health care in rural areas, and/or implementation of quality performance measurement programs. Committee members include representatives from various stakeholder groups including private insurers, purchasers, payers, employers, consumers, Medicaid program staff, as well as providers from CAHs, RHCs, CHCs, and small rural hospitals and clinician practices (see Appendix C). The timeline for the project is included in Appendix B.

To help inform the Committee's deliberations regarding salient measurement issues that are associated with providing healthcare in rural areas, NQF conducted an environmental scan to identify performance measures and measurement efforts that are being used by both public and private entities to assess and influence rural providers and to identify and describe how these measures and programs are being used and validated to accurately reflect quality, cost, and/or resource use. To inform this environmental scan, NQF reviewed relevant peer-reviewed and grey literature and publicly available repositories of measures (including NQF's portfolio of measures). NQF also sought input from the NQF members and key informants. Key results from the scan included a catalogue of more than 1000 hospital- and clinician-level performance measures, which were tagged according to selected condition or topic areas, rural relevancy, and use in various Federal quality improvement programs. Measures were tagged as relevant for rural providers based on both published and on-going efforts to identify measures useful and meaningful for CAHs and RHCs.

Key Issues Regarding Measurement of Rural Providers

Throughout the project, the Committee identified several key issues and challenges that can negatively influence quality measurement and/or improvement activities for rural providers, most of which are interrelated to a greater or lesser extent. These include:

- ***Geographic isolation*.** Although not all rural areas are geographically isolated, many are. This isolation can result in limited availability of healthcare providers, including specialists and post-acute care providers, difficulties with transportation, and lack of broadband access that can severely limit information technology capabilities. It also can negatively impact the amount of support available from referral, academic, or other leadership centers that might otherwise supply significant medical, educational, or other resources.
- ***Small practice size***. Many rural hospitals and clinician practices tend to be small and these often have limited time, staff, and/or finances available for quality improvement activities including data collection, management, analysis, reporting, and improvement. In many rural areas, there is a limited supply of individuals with specialized technological skills (e.g., ability to use EHRs or registries for measurement calculation/improvement) and/or quality improvement skills to use measurement results to drive improvements in care. Lack of financial resources also impacts ability to invest in HIT infrastructure and in quality improvement initiatives. Finally, those who serve in small hospitals and practices often have multiple, disparate responsibilities (e.g., direct patient care, business and operational responsibilities, etc.) that compete with quality improvement activities.

- ***Heterogeneity*.** There is incredible heterogeneity across rural areas of the U.S. While many rural areas are relatively close to urban or suburban areas, many are not, and in fact, many are quite remote[i]. Many rural areas, particularly frontier areas, must contend with seasonal hazards that impact care provision. As noted earlier, many rural areas (although not all) also have a disproportionate number of vulnerable residents (e.g., economic or other social disadvantages, those in poor health, those with poor health behaviors, etc.). This heterogeneity is a particular issue for healthcare performance measurement, with implications regarding the applicability of measures or measure sets, adjustment of measures for patient characteristics, reliability of measures, and use of measures. This heterogeneity in setting and patient population also drives diversity among providers, which has implications when comparing providers for accountability purposes.
- ***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 more isolated rural areas. Relatedly, many rural providers may not offer a full suite of healthcare services. (e.g., some small hospitals or CAHs may not do surgery, have ICUs, etc.) and thus some measures used in various quality improvement programs may not be applicable.

The Committee acknowledged that most of these challenges are not limited to rural areas, but members believe that their impact on quality measurement and improvement likely is exacerbated in rural areas.

The Committee also noted several additional challenges that arise due to the way CAHs, RHCs, and CHCs are paid for services provided to Medicare beneficiaries. Although CAHs bill Medicare Part A for their services like other hospitals, the payment is cost-based versus based on diagnosis-related groups (DRGs). There is anecdotal evidence that the diagnostic and procedural coding for CAHs may not be as accurate as that done in hospitals that are paid based on DRGs; moreover, there is concern that patients seen in CAHs may have relatively higher acuity than is indicated through the diagnosis codes that are documented. However, if coding is not accurate, comparison of provider performance may not be accurate when claims-based measures are used. This may be exacerbated for outcome measures that are risk-adjusted using diagnostic and/or procedural data.

RHCs also are paid on a cost-basis through the Medicare Part B trust fund, although they actually submit Medicare Part A claims. However, because the services are billed through Part A, services are described using revenue center codes rather than through CPT codes that are used by most other clinicians when they submit Part B claims. Thus, most of the performance measures specified for clinicians using claims data may not be applicable to clinicians in RHCs because the measures are specified using CPT codes (unless the RHCs are also reporting CPT codes as well as revenue center codes). Also, clinicians working

[i] The Federal government distinguishes between various "levels" of rurality. "Frontier" areas are the most remote and sparsely populated rural areas. Depending on the definition used, between 5.6 and 9.9 million Americans live in frontier areas.

in RHCs occasionally provide services that fall outside those covered by RHCs (e.g., more extensive diagnostic services) and these are billed to Medicare Part B. Thus, these clinicians may provide some services that could be reported to CMS programs such as Physician Quality Reporting System (PQRS), but the bulk of the services they supply is not captured in PQRS. As with RHCs, CHCs bill Medicare Part A primarily (although some services are billed through Part B); thus, it is unclear the extent to which current claims-based measures can be used for these providers.

Recommendations

After discussion of many of the rural health and setting-specific challenges related to performance measurement of rural providers, the Committee agreed that their recommendations should, at minimum, address the following four key issues:

- Low case-volume
- Need for measures that are most meaningful to rural providers and their patients and families
- Alignment of measurement efforts
- Mandatory versus voluntary participation in CMS quality improvement programs

The Committee offered their recommendations under two key assumptions. First, past experience of quality measurement and improvement efforts can be used to inform future efforts for rural providers, many of whom have, to date, been excluded from CMS quality initiatives. Second, the design of current CMS quality programs (including how measures are developed, selected, and used and how payment incentives are allocated) should not constrain recommendations for future measurement and improvement efforts for rural providers.

As should be expected, because many of the challenges of measurement for rural providers are interconnected, so also are many of the recommendations to address these challenges. Consequently, the order of the recommendations should not be construed as a listing of "most important to least important" recommendations. Instead, they should be considered a compendium of policy recommendations that are, to a large extent, interdependent. Importantly, many of the recommendations made by the Committee directly address the low case-volume challenge, while several others address this challenge indirectly.

Make participation in CMS quality improvement programs mandatory for all rural providers but allow a phased approach for full participation across program types

As mentioned earlier, many rural healthcare providers are systematically excluded from participation in various CMS quality improvement programs. Specifically, CAHs are not mandated to report quality measure data for the Hospital Compare program, although they can *voluntarily* submit data for public reporting through this program. CAHs, are, however, completely excluded from the Inpatient Quality Reporting (IQR), Outpatient Quality Reporting (OQR), and Hospital VBP programs because they are not

paid under the Medicare's hospital IPPS. Likewise, clinicians who practice solely in RHCs and CHCs are not eligible to participate in the PQRS, Physician Compare, or VBPM programs.[j] Moreover, rural providers in these or other settings (i.e., small hospitals or small practices) may be unable to fully participate in these programs on a measure-by-measure basis due to low case-volume.

Because these rural providers are systematically excluded from these highly visible quality improvement programs, there is some concern that they may be less likely to implement comprehensive quality measurement efforts, thus impacting their ability to identify and address opportunities for improvement in care. Exclusion from such programs also may imply, inadvertently, that measurement and improvement efforts on behalf of rural residents are unimportant to the U.S. healthcare system as a whole. Exclusion from these programs also results in a lack of easily-accessible information about provider performance for rural residents. Not only does this lack of data deny many rural residents the ability to choose providers based on performance, it also may suggest, again inadvertently, that rural providers cannot provide high-quality care and consequently drive the outmigration of patients from rural hospitals and practices. In such cases, rural residents may decide to seek care from non-rural providers, which may increase the burden of rural residents (e.g., having to drive further to obtain care) and could also negatively impact the financial viability of rural providers. Finally, exclusion of rural providers from the CMS quality programs also prevents rural providers from earning payment incentives that are open to non-rural providers. Accordingly, the Committee recommended that CMS should not only allow participation in quality initiative programs for all rural providers, but should make such participation mandatory. ***This recommendation for mandatory participation for all rural providers is, however, contingent on uptake of several of the other Committee recommendations, particularly those related to measure selection and use, payment incentive options, and alignment*.**

The Committee recognized that requiring participation of all rural providers across all of the various CMS programs, including the pay-for-performance programs, cannot and should not be implemented immediately. This is due to a variety of factors, including the relative inexperience of many rural providers in federal quality measurement efforts, constrained resources of many rural (particularly small) providers, and the low case-volume challenges inherent in many measures included in current CMS programs. Accordingly, the Committee strongly supported the use of a phased approach for including CAHs, RHCs, and CHCs in CMS quality improvement programs.

One option might be to begin including rural providers in pay-for-reporting programs and then gradually transition to public reporting and then, perhaps, to pay-for-performance programs. Such a phased approach would be consistent with past CMS policy for providers in other settings. For example, in the PPS hospital setting CMS instituted pay-for-reporting programs to incentivize providers to report quality data on a set of performance measures. At about the same time, CMS also began to publicly report

[j] These clinicians can participate in these programs when they provide services outside of the RHC and CHC settings. Similarly, clinicians providing outpatient services in CAHs can participate in PQRS going forward, even if he/she has reassigned billing rights to the CAH.

measure results in order to provide information to consumers, payers, purchasers, and other stakeholders to help inform their decisionmaking regarding healthcare issues. Subsequently, CMS implemented a value-based payment program whereby hospitals received incentives based on their performance on certain quality and cost measures. Over time, CMS has changed the incentive structure so that negative payment adjustments ("penalties") are applied if providers fail to report quality data, reach a performance threshold, or show improvements in their performance score (depending on the particular program). For PPS hospitals, this transition from pay-for-reporting to value-based purchasing with both positive and negative payment adjustments has been underway for more than a decade. CMS has implemented a similar, though not quite identical path, for clinicians paid through the Medicare Physician Fee Schedule (as well as for providers in other post-acute care/long-term care settings), although the timeframe has been relatively more aggressive. As noted earlier, the evolution of value-based payment incentive programs for clinicians will continue with implementation of the MACRA.

Committee members recognized, however, that many rural providers (e.g., those CAHs who have been voluntarily reporting performance scores for public reporting through Hospital Compare) may not need or want a formal phased approach that transitions through types of programs. One solution would be to mandate participation in an overall quality improvement program, but to structure the rewards in a hierarchical manner (e.g., providers who simply report performance scores to CMS would earn a certain bonus amount, those who allow their scores to be publicly reported would earn an additional amount, and those whose performance meets a certain threshold for achievement and/or improvement would earn an even higher bonus).

Use measures for rural providers that explicitly address low case-volume

The key measurement challenge facing rural providers, no matter the setting, is the likelihood of low case-volume for many measures used in current CMS quality improvement programs. As already mentioned, potential solutions to this problem are weaved throughout many of the Committee's recommendations. Additional recommendations by the Committee specific to this challenge include:

- ***Use measures that are broadly-applicable across rural providers***. The Committee identified several topic areas (e.g., vaccinations, screening, blood pressure control, diabetes control, medication reconciliation) that would apply to a large proportion of patients served by rural providers. Such measures should be considered for use in core and optional measure sets available to rural providers (a recommendation described later in this report).
- ***Consider measures that reflect the wellness of the community***. Because many factors affect community wellness, population-based measures do not assess performance of individual providers, although they may sometimes be used for individual clinician-level or facility-level accountability. Although these types of measures address one of the triple aims of the National Quality Strategy (i.e., increasing the health of the population), the Committee did not support use of such measures for in pay-for-performance initiatives for rural providers. However, members did recognize the usefulness of population health measures for internal quality improvement purposes at the provider level. Because the denominator for these kinds of measures is a particular sub-population (e.g., community, region, age-based group, etc.) there typically would be no difficulty in terms of case-volume.

- ***Reconsider exclusions for existing measures***. Many measures, often for valid reasons, exclude large numbers of patients. As an example, the HCAHPS measures exclude patients who are residents of nursing facilities or who receive hospice care due to the difficulty in collecting data from these patients and the concern that they may conflate their hospital experiences with those of the nursing facility or hospice. However, for rural providers with very small patient panels, the exclusion of these patients exacerbates the low case-volume challenge, as potentially many otherwise eligible patients are not surveyed. Measure developers should consider the impact of low case-volume for certain providers when developing and revising measures.
- ***Consider development and use of measures that are constructed using continuous variables.*** Measuring an aspect of care using a continuous variable rather than a binary variable may require a smaller sample size to detect meaningful differences between providers. Examples of this type of measure would be assessing the time until a medication is given rather than just whether or not a medication was given or measuring the number of preventive services received rather than whether or not preventive services were received. Note, however, that care should be taken when considering such measures for rural providers (particularly timing measures), as such measures would be sensitive to outliers and because the environmental context could potentially invalidate comparisons between providers.
- ***Consider development and use of ratio measures.*** Ratio measures are measures where the numerator is not necessarily a part of the denominator. For example, in a measure of bloodstream infections, the number is the number of bloodstream infections but the denominator may be the number of days where the patient has a central line. These kinds of measures could circumvent the low case-volume problem because each patient could contribute many "units" to the denominator.

It should be noted that the above recommendations will not necessarily eliminate the low case-volume challenge for all rural providers, but they are options that may ameliorate the problem to some extent for some providers.

Use guiding principles for selecting quality measures that are relevant for rural providers

The Committee did not perceive creating lists of specific measures for use in CMS accountability programs as within their purview during this current project, particularly as the specific measures may vary based on provider (hospital vs. clinician) and use (e.g., pay for reporting vs. for performance), and because measures may "transition" from one use to another over time as experience builds. Instead, Committee members identified several principles[k] that should be used by CMS or other stakeholders when selecting measures for inclusion in quality improvement programs that are appropriate for rural healthcare providers. Many of the principles are consistent with the criteria used by NQF to evaluate individual candidate performance measures for potential endorsement. The NQF measure evaluation criteria reflect desirable characteristics of performance measures and are used to determine the

[k] Note that the Committee made additional, separate recommendations related to many of these principles.

suitability of measures for use in both internal quality improvement efforts and in accountability applications, including pay-for-performance. Several of the principles also are consistent with the measure selection criteria used by the Measure Applications Partnership (MAP), an NQF-convened mulitstakeholder group that is charged with providing recommendations to HHS on the selection of quality performance measures for at least 20 federal quality improvement programs. The MAP criteria are intended to assist the MAP with identifying characteristics that are associated with ideal measure sets used for public reporting and payment programs.

The following table lists the Committee's suggested principles for selecting measures to be used to assess performance of rural providers. The table indicates whether the principle is currently included as part of the NQF's endorsement criteria, the MAP's measure selection criteria, both, or neither. It should be noted that although many of the principles overlap with NQF endorsement or MAP criteria or are applicable across multiple settings and providers (not just rural providers), there often is a particular rural perspective that should be considered in the measure selection process.

Table 1: Principles for selecting measures to assess performance of rural providers

Principles	NQF Endorsement Criteria	MAP Measure Selection Criteria
Address the low case-volume challenge. Because many rural areas will have small sample sizes that will impact measure reliability, measures used for rural providers should be broadly applicable for most rural providers.		
Facilitate fair comparisons for rural providers. Because of the heterogeneity of rural providers as well as challenges (e.g., distance) that are particularly relevant to rural (as opposed to urban or suburban) providers, selected measures must allow for fair comparisons between providers. This can be accomplished either through the construction of the measure itself (e.g., through appropriate case-mix adjustment) or through program policy such as establishing appropriate peer groups for comparison, or both.		
Address areas of high risk for patients. The Committee noted that some care processes should "just happen" regardless of provider or size of patient panel and these should be prioritized for selection into quality improvement programs (e.g., medication reconciliation).		

Principles	NQF Endorsement Criteria	MAP Measure Selection Criteria
Support local access to care. To the extent possible, the Committee favors use of measures that promote provision of care at the local level. The Committee recognized that such measures may not yet exist (e.g., telehealth measures). They also noted that such measures may not necessarily be appropriate for individual providers, but instead be better suited for "higher" levels of analysis such as health plans, ACOs, or even geographic populations.		
Address actionable activities for rural providers. It is important to realize that not all medical conditions or procedures are addressed by all rural providers and therefore many measures may not be appropriate for use with rural providers. Additionally, some activities (such as triage and transfer) may be more common among rural providers. Some Committee members suggested that measures selected for use for providers who are new to quality measure reporting should be completely within the control of the provider (e.g., process measures vs. outcome measures). However, the Committee did not reach consensus on this aspect of selection, as many outcome measures certainly can be influenced, if not directly controlled, by providers. Moreover, improvement activities initiated as a consequence of outcome measures necessarily require local solutions.		
***Be evidence-based*.** Measures should be supported by empirical evidence demonstrating clinical effectiveness and a link to desired health outcomes.	X	
Address areas where there is opportunity for improvement. In some cases, measures that are “topped out” in some areas of the country may still offer opportunity for improvement in rural areas and thus these should be considered for selection into programs for rural providers.	X	
Be suitable for use in internal quality improvement efforts. Because the primary goal of measurement is to improve the quality of care received by patients and their families, rural providers should be able to use measures selected for various external programs in their own internal quality improvement efforts.	X	

Principles	NQF Endorsement Criteria	MAP Measure Selection Criteria
Require feasibility for data collection by rural providers. Because of resource constraints, the data collection process can be overly burdensome for many rural providers. Thus, measures selected for use in CMS programs should rely on data that are readily available or are feasible to collect (e.g., in structured data fields in EHRs). In addition to reducing the burden of reporting, ease of data collection can also facilitate internal quality improvement efforts because often the same staff members who collect the data also implement improvement activities.	X	X
Exclude measures that have unintended consequences for rural patients. Measures that could potentially hinder access to healthcare in rural communities should not be selected for use in quality improvement programs.	X	X
Be suitable for use in particular programs. All measures have strengths and weaknesses, but there is general consensus that only the "strongest measures" (in terms of evidence, reliability, validity, etc.) should be used in pay-for-performance programs. Relatedly, measures selected for particular programs ideally should be diverse in type and in terms of burden required of rural providers. Moreover, they should be useful for the programs for which they are selected (for example, measures used for public reporting should be meaningful for consumers and purchasers who use the results for decisionmaking).		X
Select measures that align with other programs. Alignment with other programs will help reduce measurement burden for rural providers; this will be particularly relevant for rural providers with severe financial or staff constraints.		X
Support the triple aim. Measures chosen for use in CMS programs should support each of the aims for the National Quality Strategy (NQS): better care, healthy people/healthy communities, and affordable care. Because many rural communities have a high percentage of socially, economically, or medically disadvantaged residents, measures that support the aim of creating and maintaining healthy communities may be particularly salient.		X

Use a core set of measures, along with a menu of optional measures, for rural providers

As noted earlier in this report, there is tremendous heterogeneity in the services that are delivered by rural providers as well as in the patients they serve. For example, some CAHs provide surgical care while others do not; similarly, some providers may serve a substantial number of patients with diabetes, while others may serve very few. For example, only 76 percent of rural hospitals with 25 or fewer beds perform inpatient surgery, compared to 93 percent of rural hospitals with 26-50 beds; also, less than 20% of the smallest hospitals have Intensive Care Units (ICUs), while more than 90% of hospitals with more than 50 beds offer this care. [I]

To address this heterogeneity, Committee members recommended use of a core set of measures in CMS programs for rural providers (ideally, no more than 10-20) and that this core set be supplemented by a menu of optional measures that can be used as applicable. Measures in the core set should be cross-cutting rather than disease-specific (e.g., address primary and preventive care), while measures in the optional set would allow the flexibility needed to tailor measurement based on the types of patients served and the types of services offered. Moreover, the number of measures available in the optional set must be large enough—and the number of measures to be reported on must be small enough—that providers with even the smallest case volumes should be able to find applicable measures. A key advantage of use of a core set of measures is that users of measures would be able to compare all rural providers across a small set of measures.

The Committee noted that a variety of measure types (including structural, process, outcome, patient experience, and composite measures) should be available in these core and optional sets. While members agreed that outcome measures are particularly desirable, they noted that low case-volume may be a particular challenge for some providers, depending on the measure. However, they also recognized that patient experience measures (one type of patient-reported outcome measure) might be particularly relevant for rural providers and would likely not suffer as badly from low case-volume challenges, as they are typically not condition- or service-specific. However, the Committee recognized the potential data collection burden and cost implications for these kinds of measures.

Finally, the Committee also recommended that measures used in the core and optional sets use a variety of data collection strategies and data sources, so that the burden of data collection is minimized. The Committee specifically cautioned against including measures in the core and optional sets that rely on the efforts of few individuals. This recommendation is particularly relevant for very small practices that have limited staff (e.g., nurses who have the expertise to abstract data for measurement but who must also provide direct patient care).

[I] The 21st Century Rural Hospital. A Chart Book. March 2015. Available at: http://www.shepscenter.unc.edu/wp-content/uploads/2015/02/21stCenturyRuralHospitalsChartBook.pdf

Measures included in such a core set should be broadly applicable to a majority of patients in rural settings, and measures chosen by providers from the optional set should be those for which they have a large enough patient pool. Examples of measures that would be appropriate for the core measure set would include screening, immunization, or medication reconciliation measures. While this would not necessarily solve the low case-volume problem for all rural low-volume providers, it would greatly reduce the number of providers who have too few patients for reliable and valid measurement.

Interestingly, use of a core set of measures was advocated in an April, 2015 report released by the Institute of Medicine. This report, *Vital Signs: Core Metrics for Health and Health Care Progress,* recommended a set of 15 "core measures" that will provide consistent benchmarks for health progress across the nation and improve system performance in the highest-priority areas. Additional "related priority measures" also were identified for each of the core measures. The core measures included, among others, well-being, addictive behavior, care access, preventive services, and patient safety (these also were identified by the Committee as priority areas for rural-relevant measurement; see below).

Consider measures that are used in Patient-Centered Medical Home models

Because much rural healthcare involves the delivery of primary care, and because many public and private efforts currently are directed towards the establishment of PCMHs, the Committee recommended particular consideration of measures used in PCMH models. Many such measures exist, conform to the principles cited above, and are already in use by many rural providers (thus reducing the burden of data collection). Examples of such measures include those focused on breast, cervical, and colorectal cancer screening, poor control of HbA1c, blood pressure control, and pneumonia vaccination.

Consider rural-relevant sociodemographic factors in risk adjustment

In response to recommendations by a multistakeholder panel of experts in healthcare performance measurement and disparities, NQF recently lifted, for a 2-year trial period, a previous prohibition against including sociodemographic (SDS) factors (e.g., age, race, ethnicity, income, educational attainment, primary language, etc.) in risk adjustment (also known as case mix adjustment) of healthcare performance measures.

Because many patients served by rural providers are socially and/or financially disadvantaged, the Committee applauded this change in policy, seeing it as a way to facilitate more valid comparisons among rural providers. In addition to many of the factors already identified by NQF's SDS Expert Panel (income, education level, insurance status), the Committee also recommended that the following rural-relevant SDS factors be considered in potential risk adjustment methodologies:

- Distance to referral hospital
- Time of travel to referral hospital or physician office
- Availability of other healthcare resources in the area (e.g., primary care provider density, availability of home health, nursing facilities, or hospice)
- Shortage area designations defined by HRSA (i.e., Health Professional Shortage Area, Medically Under-Served Areas, Medically Under-Served Populations)
- Frontier area designations

Some members of the Committee also noted that the size of the medical staff reflects the availability of resources and therefore might merit consideration in risk-adjustment methodologies. However, the size of the medical staff is not a patient-related factor and therefore may not be appropriate for case-mix adjustment of healthcare performance measures. Similarly, it is unclear whether other factors such as seasonality (which is important in rural areas where weather can severely restrict travel) are appropriate for case-mix adjustment.

Relatedly, the Committee also recommended that at least one rural health expert be empanelled on the yet-to-be-formed NQF Disparities Committee, the formation of which was recommended by NQF's SDS Expert Panel. The work of the NQF Disparities Committee will be to monitor implementation of the revised policy, monitor for unintended consequences (particularly for disadvantaged patients and safety net providers), assess trends in disparities, review and provide guidance related to methodologies for adjustment and stratification (e.g., use of community factors, collection of standard sociodemographic data), and help ensure that social and demographic disparities in care do not get overlooked, but rather remain an integral part of quality measurement. This Committee will have the expertise needed to determine if the above-listed factors would be suitable for case-mix adjustment. Inclusion of at least one rural health expert on this panel will ensure that disparities among rural residents are considered and that non-rural experts can benefit from knowledge and practices used in rural health care delivery (for example, race and ethnicity data are routinely collected by HRSA through the Uniform Data System). This Committee—particularly with the inclusion of at least one rural health expert—will be able to consider and provide specific guidance about how the challenge of low case-volume can be balanced, or possibly mitigated, by appropriate risk-adjustment for rural providers.

Create a MAP workgroup to advise CMS on the selection of rural-relevant measures

Under the assumption that CMS eventually will mandate participation of CAHs, RHCs, and CHCs in their quality improvement programs, the Committee strongly recommended that experts in rural health be given a role in the selection of measures to be used in such programs. Specifically, the Committee recommended that a Rural Health workgroup be added to the Measure Applications Partnership (MAP). The MAP utilizes a two-tiered organizational structure whereby setting- or population-specific workgroups review and provide recommendations on measures for relevant programs and/or provide input on measurement gaps and areas for measure refinement and development. Current workgroups exist to provide input on the selection and coordination of measures for hospitals, clinicians, and post-acute and long-term care providers, as well as input on measures and issues related to the quality of care for Medicare/Medicaid dual eligible beneficiaries. Recommendations from the individual workgroups are then reviewed and approved by the MAP Coordinating Committee prior to submission of the recommendations to HHS. This Rural Health Workgroup would function in a manner similar to that of the MAP Dual Eligible Beneficiaries Workgroup, which is tasked with providing recommendations on issues related to the quality of care for beneficiaries who are dually eligible for both Medicare and Medicaid. Activities of this workgroup include identifying a set of the best available measures to address the needs of this unique population, identifying persistent measure gaps, and addressing measurement topics relevant to vulnerable individuals, including quality of life, person- and family-centered care, shared decisionmaking, and functional outcomes. Ideally, a MAP Rural workgroup would reflect the

various types of rural providers, including those from CAHs, RHCs, CHCs, and small PPS hospitals and clinician practices, and reflect the diversity of the rural population in the U.S. (e.g., rural-adjacent areas, frontier areas, heavily minority areas, etc.). This MAP workgroup also would use the measure-selection principles cited above when making its recommendations to HHS.

Pursue continued alignment of measurement efforts for rural providers

Lack of alignment in quality measurement was one of the key challenges for rural providers that was identified by the Committee. Accordingly, the Committee strongly recommended continued efforts to align both measures and data collection efforts, as well as improvement and informational resources.

Specifically, the Committee emphasized the need for a uniform set of measures that can be used, at minimum, across HHS programs (particularly CMS and Health Resources and Service Administration [HRSA] programs), and, to the extent possible, across other programs including those used by private payers, credentialing and accrediting bodies, etc. This recommendation is in alignment with the IOM's April 2015 recommendation for a streamlined set of measures to provide benchmarks for health progress across the nation. Members also noted a need for measures that can be used across multiple healthcare settings (e.g., in both ambulatory and hospital settings). For example, measures such as medication reconciliation would apply to both settings and would incentivize improved communications and patient safety. Measures across hospital settings may also be particularly helpful for CAHs because they often provide services (e.g., physical therapy, occupational therapy, imaging) that are typically provided in an outpatient setting in non-rural areas.

The Committee also recognized that data collection can be particularly burdensome for rural providers, either because small rural providers may not have the staff needed to collect data (e.g., for measures that require laborious abstraction from medical records) or because they may not have the resources (financial, staff expertise, etc.) to invest in or maximize use of sophisticated HIT systems that would facilitate calculating and reporting of quality measures. Committee members therefore recommended that HHS work to develop standardized processes so that data that are used for various purposes (e.g., Hospital Compare, HRSA's Medicare Beneficiary Quality Improvement Project, The Joint Commission accreditation) would have to be reported by providers only once. Note that this recommendation can be operationalized only if there is alignment of the measure sets for the various purposes. The Committee also recommended that HHS provide additional financial or other resources to assist rural providers in their data collection and reporting activities.

The Committee reiterated that many rural providers will continue to require technical assistance in order to facilitate their participation in federal programs (e.g., advice on data collection/reporting, improvement science, etc.). While members acknowledged that CMS and other federal offices already provide this kind of assistance (e.g., through the Quality Improvement Organization program under CMS, the Flex program under HRSA, etc.), they recommended that such resources be aligned across HHS to more efficiently and effectively provide support to rural providers. Such assistance will be particularly critical for those that are (or will be) new to quality measure reporting and/or to small providers who do not have sufficient staff expertise for measurement and improvement. The Committee also reiterated

that performance measures used by those offering technical assistance services should be aligned to the extent possible. Notably, a quality provision in the MACRA legislation specifically includes support for technical assistance to help practices with 15 or fewer clinicians implement the MIPS or transition to APMs.

Finally, the Committee recommended that departments within HHS that work with rural providers (e.g., CMS, HRSA, etc.) collaborate to provide opportunities for rural health stakeholders, as well as HHS staff, to interact and to obtain information regarding various departmental programs, policies, and initiatives relevant to quality measurement. In addition to providing a needed informational "one-stop shop" for rural providers, such alignment of informational resources across HHS could enable creation of more compatible policies across departments that would, in turn, be more beneficial to rural providers than policies that are discordant.

Fund development of rural-relevant measures

The Committee recommended that CMS fund the development and/or modification of measures that are particularly relevant to, and appropriate for, rural providers (especially for low-volume providers). The Committee recognized that in some cases, de novo measure development is needed, but in other cases, modification of existing measures to make them appropriate for use by rural providers may be needed. The Committee identified the following rural-relevant topic areas for potential measure development or modification at this time:

- ***Patient hand-offs and transitions***[m]. The Committee acknowledged that there are already several quality measures that address hand-offs and transitions, but agreed that additional measures are needed for rural providers. The Committee specifically noted the need for measures that assess the appropriateness of transfers (i.e., that transfers are made for the right reasons). They also suggested a need for measures that assess whether transfers are made at the appropriate time. However, they also recognized the difficulties inherent in measures of transfer timeliness for rural providers (for example, if a facility does not have an ICU, a patient may be kept, appropriately, for a longer period in the Emergency Department). The Committee also acknowledged the fact that successful hand-offs and transfers require coordination between providers and that limitations in healthcare infrastructure often hinders rather than facilitates coordination.
- ***Alcohol/drug treatment.*** Because substance abuse is highly prevalent in many rural areas, measures that focus on alcohol and drug screening and treatment are highly relevant for rural providers. The Committee agreed that measures of alcohol and drug screening are already available but noted that substance abuse measures focused on effective interventions that can be provided at the primary care level should be developed, particularly as the options for substance abuse treatment often are limited in rural areas.

[m] The Committee agreed that grouping hand-offs and transitions as a single topic area is appropriate, although they clarified that hand-off measures assess provider-to-provider communication whereas transition measures assess the movement of patients from one setting of care to another.

- ***Telehealth/telemedicine***. Currently, no measures focused on telehealth or telemedicine are endorsed by NQF. Because telehealth and telemedicine are tools that allow greater access to care, they are of particular importance to rural residents. However, the Committee in general agreed that it may be too early for development of quality measures that focus on telehealth/telemedicine. Members noted that simple structural measures of telehealth or telemedicine likely would not be helpful, in part because implementing this type of care delivery requires cooperation between providers (e.g., a primary care provider in a rural area and a specialist outside that particular area), leading to potential difficulties with attribution, and because currently there are state-specific requirements that may make consistent measurement difficult. The Committee also agreed that condition-specific telehealth/telemedicine measures are not needed (e.g., assessing blood glucose control for diabetes patients who participate in telehealth/telemedicine). However, members did agree that current measures (including disease-specific measures) should be specified so that care delivered via telehealth/telemedicine is "counted" in the measures. Finally, the Committee agreed that use of telehealth/telemedicine should be incorporated into measures of access to care.
- ***Access to care and timeliness of care***. Although a few quality measures endorsed by NQF can be considered access to care measures (e.g., those assessing follow-up care), the Committee agreed that additional measures of access to care are needed. While access to care measures may not always be considered "quality measures" per se, they provide a needed complement to other measures of care quality. However, while agreeing with the importance of access to care, the Committee did express concern that use of access to care measures may be problematic for rural providers, particularly if used in payment programs (e.g., potential for a payment penalty if obstetric services are not provided). The Committee considered timeliness of care to be another way of assessing access to care. While there are several NQF-endorsed timeliness measures, members noted that many of these are condition-specific and thus subject to low case-volume. They also noted that timeliness of care measures could be used to assess productivity, which may not always equate to quality, particularly in rural areas.
- ***Cost***. The Committee was somewhat conflicted about the need for additional cost measures for rural providers. On one hand, members recognized the need for cost information in the context of pay-for-performance programs, and noted that because many rural providers are paid by CMS through cost-based reimbursement schemas rather than through Medicare prospective payment structures, the current cost measures cannot be applied to those providers. They also noted that costs generated by primary care providers in rural areas may not be comparable to costs generated by primary care providers in non-rural areas because rural primary care providers typically provide more services themselves rather than referring to specialists. They also noted that comparing the costs of low volume rural to high volume urban providers is inappropriate given diseconomies of scale in rural areas that are a consequence of providing local access to care. On the other hand, they expressed concern that a focus on cost measures might detract from promoting development of needed quality measures. The Committee also discussed patient out-of-pocket costs, and agreed that while this can be a barrier to seeking care and therefore a potential factor that should be considered in risk-adjustment approaches, development of specific measures of out-of-pocket costs is not needed.
- ***Population health at the geographic level***. As noted earlier, the Committee agreed that population health measures are important and, moreover, could potentially resolve the low-case volume issues that are associated with disease-specific measures. Members acknowledged several potential difficulties inherent in such measures, including cultural influences that impact

healthcare decisions, availability of community resources, feasibility of data collection, and appropriate use of such measures. In general, the Committee recognized the need for shared accountability across multiple stakeholders (e.g., individuals, communities, healthcare providers, etc.) in order to improve population health, but did not support the use of such measures in pay-for-performance programs for individual hospitals and clinicians (at least until attribution issues are properly addressed). Instead, they supported a "stepwise" approach to the use of population health measures. For example, members were, for the most part, supportive of the use of such measures at higher levels of analyses (e.g., the ACO level). They also recommended development of measures that assess provider engagement in population health efforts, as such measures could be used to incentivize participation in wellness activities and programs.

- ***Advance directives/end-of-life***. The Committee agreed on the need to promote engagement in shared decisionmaking regarding end of life care planning and suggested that measures regarding advanced directives or physician orders for life-sustaining treatment (POLST) measures be developed. The Committee noted that advanced care planning is needed for all adults, not just older adults, and not just for those nearing end of life. The Committee also noted the impact of limited access to hospice or other care alternatives in many rural areas should be considered when developing measures that assess end-of-life care.

Committee members noted that the intent behind this list is to encourage research and development of measures that can be used to populate the previously-recommended core and optional measure sets for rural providers. However, they also emphasized that development of new measures should not lead to an increased measurement burden. The Committee also cautioned that any measures developed to address the above topic areas may not be appropriate for all types of programs at all times. For example, some may be appropriate for immediate inclusion in pay-for-performance programs, while others may never be appropriate for such programs and others may become appropriate for such programs only after providers gain experience with them in other ways.

For rural providers, create payment programs that include incentive payments, but not penalties

Many rural providers operate on a relatively thin financial margin, with little room to absorb payment reductions (or "penalties") without concomitant reductions in staff and/or services. Additionally, RHCs and CHCs, as well as many CAHs and small rural hospitals and clinician practices, operate in federally- or state-defined shortage areas (e.g., Health Professional Shortage Areas or Medically Underserved Areas) and may be considered part of the nation's healthcare safety net. Thus, the Committee agreed that quality program policies should be crafted so as not to potentially compromise this safety net through application of payment penalties. Accordingly, Committee members recommended that, for the foreseeable future, CMS payment incentive programs for rural providers should be designed to provide "bonus" payments only, not penalties.[n] Such a policy would incentivize reporting and improvement but would preserve the rural providers' safety net role in the communities they serve. Members noted that such a policy would make the Committee's recommendation of mandatory participation in CMS quality programs more palatable to those rural providers who have been excluded from CMS programs to date.

[n] This method is currently used in the Value-Based Payment Modifier program for small physician practices.

They also noted that because per capita health care expenditures for rural residents generally are lower than for those in other areas, "bonus" payments for rural providers should be feasible. Finally, members noted that CMS precedent for not applying penalties in quality improvement programs (e.g., for many years, PQRS offered only positive incentives; currently the VBPM program does not apply penalties to physicians in very small practices.

Offer rewards for rural providers based on achievement or improvement

Pay-for-performance programs often are designed to reward providers based on achievement of some threshold value (e.g., a national benchmark value) or on demonstration of a certain amount of improvement since a baseline period, even if they have not attained a particular measurement threshold. However, characteristics of patients in rural areas (e.g., health behaviors, cultural norms, sociodemographic factors, distance from providers) may constrain the ability of rural providers to achieve threshold values for certain quality measures. Similarly, rural providers may be unable to attain a certain level of improvement for some measures, either because they already have a very high performance (therefore making incremental improvement difficult) or because of low case-volume (in which case, achieving a statistically significant improvement may be difficult, if not impossible). Accordingly, the Committee recommended that pay-for-performance programs for rural providers should incorporate both an achievement component and an improvement component. The Committee noted that CMS' design of the HVBP offers a precedent for this type of arrangement.[o] Members cautioned that because low case-volume is a particular challenge for many rural providers, any requirement for statistically significant improvement would have to be carefully considered.

Encourage voluntary groupings of rural providers for payment incentive purposes

While the Committee agreed that detailed CMS feedback regarding performance scores should be provided at the clinician level (as is done currently in the Medicare FFS Physician Feedback Program), members were much more critical of holding individual clinicians accountable in pay-for-performance programs, particularly for rural and/or small volume providers who often have significant resource constraints and challenges with low case-volume. Instead, the Committee recommended that CMS should encourage rural providers to establish collaborative groups, as desired, for payment incentive purposes. Entry into such groups should be completely voluntary. Moreover, the groups should not be limited to clinicians only, but should be open to CAHs, RHCs, and CHCs, as well as to small rural hospitals and clinician practices. Establishment of such groups could accelerate quality measurement and improvement efforts and could help address the low case-volume challenge. Because programmatic safeguards would have to be put in place to ensure that gaming is minimized during the formation of these provider groups, Committee members suggested that HHS support this effort through establishment of a grant or pilot project.

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[o] For each of the various measures included in the program, hospitals receive a score based achievement or improvement, whichever is higher. The total performance score for each hospitals is calculated as a weighted sum of measures scores for four domains (clinical process of care, patient experience of care, outcome, and efficiency).

Fund additional work to consider how peer groups for rural providers should be defined and used for comparison purposes

Another key concern of the Committee, particularly in the context of pay-for-performance programs, is how to ensure fair comparisons for rural providers. While the issue of fair comparisons is relevant to non-rural providers, the Committee emphasized the difficulties in identifying appropriate comparison groups for rural providers due to the heterogeneity of the patients, service offerings, and overall circumstances surrounding care delivery in rural areas. In general, the Committee favored use of peer groups to assure "like-to-like" comparisons. Suggestions for defining peer groups included comparing providers with similar service lines or capabilities (e.g., those providing surgical services or those with ICU capacity), those with similar geographic isolation profiles, and/or those with similar patient characteristics.[p] There was less enthusiasm for comparison within provider type (e.g., CAH to CAH) because of heterogeneity within provider types (e.g., a 5-bed CAH may be much different than a 25-bed CAH) or lack thereof (e.g., there may be few real differences in primary care provided by RHCs, CHCs, or small clinical practices). There was also resistance to comparing providers solely on a regional basis. The Committee also recognized that for some measures (typically outcome and cost/resource use measures), appropriate statistical case mix adjustment could potentially reduce the need for peer group comparisons, but noted that more study is needed to better understand this complex issue. Finally, after a considerable amount of discussion around this issue, the Committee acknowledged the need for additional consideration of this topic and recommended that CMS fund efforts to define and use appropriate comparison groups for rural providers.

When creating and using composite measures, ensure that the component measures are appropriate for rural (particularly low-volume) providers

Committee members noted that creating a composite performance score from disparate individual measures, as is currently done in some CMS programs, may be particularly problematic for rural providers, either because they do not offer services assessed by the individual measures or have very few patients who "qualify" for some of the individual measures. For example, in some programs, such as the Hospital Acquired Condition (HAC) Reduction program, if a provider cannot report on one or more of the measures in a domain, then the score for that provider depends more heavily on the other measures in that domain (or in other domains). The Committee therefore recommended that if CMS uses a composite measure approach to assess provider performance, such composite measures should be comprised of individual measures that are applicable to rural (particularly low-volume) providers. Preferably, all providers would be assessed on the same measures within the composite; at minimum, providers should be assessed on the same number of measures in the composite (so that no one

[p] A recently-developed taxonomy of population and health-resource characteristics for rural areas may also inform efforts to define peer groups for rural providers. This taxonomy uses variables such as hospital and nursing facitli bed counts, the number of primary care and specialist physicians and other clinicians, demographic data including race, poverty level, and insurance status, and age to classify 10 different Primary Care Service Areas. See http://cph.uiowa.edu/rupri/Place/taxonomy.html.

measure is more heavily weighted for one provider than another). Individual measures used in such composites ideally would come from the core and optional measure sets that are specifically selected for rural providers as recommended by the Committee (see above).

Additional recommendations

The Committee provided additional recommendations that would benefit other quality measurement and improvement efforts for both rural and non-rural providers, as follows:

- ***Relax requirements for use of vendors in administering CAHPS surveys and/or offer alternative data collection mechanisms*** (e.g., similar to CART tool for hospitals). CAHPS surveys obtain patient-reported feedback on their experiences with care; these data are used to compute performance results regarding access to care, patient-provider communication, and shared decisionmaking, among others. Currently, collection of CAHPS data requires use of approved data collection vendors, which can be prohibitively expensive for many rural providers. The Committee noted that many hospitals use the CMS Abstraction and Reporting Tool (CART), a free tool for submitting process measure data to CMS. Thus, Committee members recommended that a similar tool/process be developed to allow reporting of CAHPS data to CMS.
- ***Facilitate quicker and broader access to performance scores and to Medicare data for quality improvement purposes***. Committee members applauded "feedback reports" provided as part of the Physician Feedback of Quality Resource and Use Reports (QRURs)/Value-Based Payment Modifier program (for clinicians) and the Medicare Shared Savings Program (for ACOs), noting that these data allow for the identification of patients in a service area, as well as the types, locations, sources, and, sometimes, costs of care provided to their patients. The Committee recommended that this kind of data be provided to all providers as quickly as possible in order to improve the care coordination for patients, reduce the overall cost to Medicare, and drive overall improvement efforts. Relatedly, the Committee also recommended that CMS facilitate faster cycle time between actual performance and use of performance data in programs. Currently performance results used in CMS improvement programs may be 2 years or more out of date (e.g., data used in 2015 programs reflect care provided in 2013 or earlier). Such long look-back periods hinder receipt of rewards for more recent improvements in care.
- ***Facilitate inclusion of CMS data into all-payer databases***. The Committee agreed that the growth of large multi-payer databases is likely to increase and that the inclusion of Medicare data (and allowing use of such data by multiple stakeholders) would help to mitigate the low case-volume challenge and may help to facilitate alignment of measurement efforts across payers.

Vignettes

(NOTE: These will be scattered throughout the report, probably as side-bar "boxes").

Vignette #1

Recently a single mother brought her 18-month old daughter to a walk-in clinic in a small, remote community. The mother told the physician assistant (PA) that the baby had stopped using her arm and appeared to be in pain when her shirt was being changed. The mother did not report a specific injury but did say that the baby tended to fall a lot. Based on the mother's description, the presentation symptoms, and the baby's age, the PA diagnosed "nursemaid's elbow", a common upper-extremity injury in children between the ages of one and five. The PA tried the standard treatment (a manipulation to "pop" the displaced ligament back into place). Unfortunately, the treatment, which was quite painful to the baby, was unsuccessful, indicating that the diagnosis was incorrect. The PA then ordered x-rays, which required a long drive to the nearest facility with radiology services. Results from the x-ray indicated early healing of both radius and ulna fractures. The PA splinted the baby's arm then referred her to an orthopedic surgeon for evaluation. The surgeon applied a cast, but because he recognized the injury as consistent with abuse fracture, initiated an evaluation by Child and Family Services and arranged for the baby's grandmother to provide care pending the outcome of the evaluation. Fortunately, the fractures healed uneventfully and the abusive family situation was corrected.

Small rural hospitals and CAHs often lack specialty care, particularly for general surgery, obstetrics, and orthopedic surgery. As in the above case, when the only orthopedist is located more than 100 miles away, the doctor must work closely with local primary care providers (PCPs) to deliver high-quality musculoskeletal care. As an example of this provider-to-provider collaboration, one hospital developed a monthly musculoskeletal quality/feedback conference, using a case-study approach to provide local PCPs the needed education to help them recognize and treat many common musculoskeletal conditions. The above story was used at one of the quality meetings, prompting a rich discussion of the proper evaluation of upper extremity injuries in young children, appropriate work-up of nursemaid’s elbow, and recognition of abuse injuries, including the common radiographic patterns of non-accidental fractures. As a group, everyone agreed on a “low-threshold” policy for orthopedic referral when non-accidental trauma is even remotely suspected. The group also agreed that, unless the history and clinical presentation of a nursemaid’s elbow is obvious, x-rays of the extremity would be obtained before attempting treatment.

Vignette #2

Often, trade-offs occur in rural Emergency Departments (EDs). One particular ED is located in a CAH in northeastern Maine. The hospital is one of two hospitals in the county, providing care for a relatively older population of 33,000 individuals. The nearest tertiary care hospital is 100 miles away and is accessible only by a secondary rural road. The hospital is served by Life Flight of Maine, which functions with two helicopters for all 40 hospitals in the state. Unlike many rural EDs that are staffed entirely by nurse practitioners and PAs, this particular ED has around-the-clock physician staffing.

One night, when the hospital's orthopedic surgeon was away for a conference, an 88-year-old woman, the matriarch of a large family fell in the middle of night and fractured her hip. Her fracture was diagnosed in the ED and her pain was subsequently managed, but she had to be transferred to the

tertiary care hospital for surgery because the orthopedic surgeon was out of town. This transfer required a long, painful ambulance ride to a setting unfamiliar and inconvenient for both the patient and her family. Unfortunately, her son, who lived with his wife and three children only a few miles from his mother, was killed when his car slid on the snow covered road as he was on his way to visit his mother.

Treatment options for heart attack include IV thrombolytic therapy or invasive cardiac catheterization. While both have relatively comparable outcomes, cardiac catheterization is preferred but requires admission to a tertiary care facility. Because occasionally the IV thrombolytic therapy fails to open the artery, in most rural hospitals patients are immediately transferred (often via helicopter, to minimize the time of transfer) after being given the IV medication. A 56-year-old man presented to this ED in January with chest pain and shortness of breath and was diagnosed with the most dangerous type of heart attack within minutes of arrival. Unfortunately, weather conditions prevented the helicopter flight, and the patient died while awaiting transport.

Vignette #3

Two years ago, the smallest and most rural of the 12 clinics in an ACO in Nebraska added a care coordinator position to help patients with post-discharge follow-up after hospital admissions and ED visits. Addition of this position has improved the care provided to their patients, in large part because they are now able to correct medication errors for their patients who have been hospitalized. In fact, the quality gains have been so apparent that they have added a second care coordinator position. The care coordinators from all 12 clinics use an online discussion board to share success stories and discuss common problems and solutions. This clinic has some of the best quality performance results of all the clinics to date and the care coordinators' experiences demonstrate that small, rural primary care clinics can implement needed quality improvement infrastructure.

Vignette #4

Operating Community Health Center in in rural North Dakota can be challenging. For example, the scope of clinical practice is wide: it is not unusual to provide care for those with mental illness, heart disease, diabetes, cancer, and routine acute illnesses all in the same day. Providers at the clinic often deal with emergency situations; for example, not long ago the doctors helped to stabilize a gentleman with chest pain (who drove 45 minutes to get to the clinic) before he was transferred to a larger center for additional care. It is not unusual to provide advanced care for patients with rare or serious conditions. For example, one physician had to administer an experimental medication because the nearest specialist who could deal with the patient's condition is 8 hours away. Providers routinely manage patients with severe depression and schizophrenia because there is a 6-month wait time to see a psychiatrist. The doctors at the clinic also see patients who are in a nursing home, hospitalized, or enrolled in hospice. Despite these clinical challenges, the clinic staff is committed to quality measurement and improvement. They report quality data to multiple organizations, including the federal government. They have received multiple awards for management of patients' chronic illnesses. But because they are small and isolated, they must wear many quality improvement "hats", including that of data collector, IT specialist, metric analyzers, and improvement coordinator.

Vignette #5

Small clinician practices in rural areas face similar challenges to those of Rural Health Clinics and Community Health Centers, particularly when located in areas that are more remote. A typical Monday morning in such practices may include the doctor's early arrival (after being on-call over the weekend) to catch up medication orders, phone calls, lab reviews, and charting; a huddle with staff to discuss any follow-up needs from the previous week or weekend; troubleshooting the EHR; meeting with a payer to negotiate fee schedules; and, finally, seeing patients. The doctor often will spend the evening doing other administrative and quality improvement activities. Small rural practices usually do not have the resources to hire a formally trained financial officer, care coordinator, quality improvement coordinator, bookkeeper, compliance administrator, or technology expert. As more and more private and public payers use performance measurement results for payment purposes, the burden of data collection and reporting dramatically increases, particularly when measures used for different purposes are not aligned.

Vignette #6

One Rural Health Clinic in a central Mississippi serves a socio-demographically vulnerable population in a designated Health Professional Shortage Area. Certified Nurse Midwives (CNMs) play an important role in these clinics by providing maternity care as well as other primary care services. Near the end of a recent well woman visit, the CNM planned to discuss the patient's BMI (27+, categorized as overweight) and the need for weight loss and increased physical activity, as well as several other preventive health issues. However, before she could begin the discussion, the patient requested medication to stimulate her appetite. She shared that she felt “too skinny and needed to thicken up”. In trying to explain the lack of medical indication for such a medication and the health risks associated with overweight and obesity, the patient reiterated her belief that she needed to gain weight. With continued discussion, this patient revealed various cultural reasons for wanting to gain weight. In the rural south, cultural norms and beliefs can be strong determinants of health, necessitating considerable educational and preventive care efforts by providers in these areas.

Appendix A. Glossary of Terms

Critical Access Hospital (CAH) – CAH is a hospital certified under a set of Medicare Conditions of Participation (CoP), which are structured differently than the acute care hospital CoP. Some of the requirements for CAH certification include: having no more than 25 inpatient beds; maintaining an annual average length of stay of no more than 96 hours for acute inpatient care; offering 24-hour, 7-day-a-week emergency care; and being located in a rural area, usually, although not always, at least 35 miles drive away from any other hospital or CAH.[a]

Community Health Center (CHC) – CHCs serve communities with limited access to health care. Health center program fundamentals include the following: located in or serve a high need community; governed by a community board; provide comprehensive primary health care; provide services available to all; and meet other performance and accountability requirements. There are three types of health centers including, grant-supported federally qualified health centers, non-grant-supported health centers, and outpatient health programs/facilities operated by tribal organizations. [b]

Frontier Areas – In general, frontier areas are sparsely populated rural areas that are isolated from population centers and services. Definitions of frontier for specific state and federal programs vary, depending on the purpose of the project being researched or funded. Some of the issues that may be considered in classifying an area as frontier include: population density, distance from a population center or specific service, travel time to reach a population center or service, functional association with other places, availability of paved roads, and seasonal changes in access to services.[c]

Health Professional Shortage Areas (HPSAs) – Health professional(s) shortage area means any of the following which the Secretary of HHS determines has a shortage of health professional(s): (1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.[d]

Hospital Acquired Condition (HAC) Reduction program – The HAC Reduction program is a pay-for-performance 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. HACs are high-cost and/or high-volume conditions that occur during a hospital stay, result in

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[a] HRSA. http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Introduction/critical.html

[b] HRSA. About Health Centers. http://bphc.hrsa.gov/about/

[c] Rural Assistance Center- http://www.raconline.org/topics/frontier#definition

[d] HPSA Designation Criteria. Available at http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/designationcriteria.html

higher costs of care, and can reasonably be prevented if evidence-based care is provided. Pressure ulcers, various surgical site infections, and injuries sustained in falls or other traumatic events are examples of HACs that are included in this program. Hospital performance under the HAC Reduction Program is determined based on a hospital's Total HAC Score, which can range from 1 to 10. The higher a hospital's Total HAC Score, the worse the hospital's performance under this program. [e]

Hospital Compare website – The Hospital Compare 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.[f]

Hospital Inpatient Quality Reporting (IQR) program – IQR 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.[g]

Hospital Outpatient Quality Reporting (OQR) program – OQR is a pay-for-reporting program with performance information reported on the Hospital Compare website. The goals of the program are to establish a system for collecting and reporting on quality performance of hospitals that offer outpatient services such as clinical visits, emergency department visits, and critical care services.[h]

Hospital Value-Based Purchasing (HVBP) program - HVBP is a pay-for-performance program that aims to improve healthcare quality by providing incentive payments to hospitals that meet or exceed performance standards. Hospitals are scored based on their performance on each measure within the program relative to other hospitals, or on how their performance on each measure has improved over time. Four domain-level scores (clinical process of care, patient experience of care, outcome, and efficiency) are calculated from scores of measures that make up the domains. Scores from each domain

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[e] CMS.gov. Hospital-acquired conditions (present on admission indicator) website. Available at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/index.html. Last accessed January 2015.

[f] CMS.gov. Hospital Compare website. Available at http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalCompare.html. Last accessed January 2015.

[g] Centers for Medicare & Medicaid (CMS) website. . Available at https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalRHQDAPU.html. Last accessed December 2014.

[h] 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.

are weighted and summed to determine the total performance score. Measures selected for the HVBP program must be included in IQR and reported on the Hospital Compare website for at least one year prior to use in the HVBP program.[i]

Medically Underserved Area – Medically underserved areas/populations are areas or populations designated by HRSA as having too few primary care providers, high infant mortality, high poverty or a high elderly population.[j]

Medicare and Medicaid EHR Incentive ("Meaningful Use") program – MU 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.[k]

Medicare Shared Savings Program (Shared Savings Program) – This 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 will reward ACOs that lower their growth in Medicare spending while meeting performance standards on quality of care and putting patients first. Participation in an ACO is purely voluntary.[l]

Physician Compare – A 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.[m]

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[i] The FY 2015 IPPS/LTCH Final Rule *Fed Registr* 2014;79:49853-50449. Available at https://federalregister.gov/a/2014-18545 . Last accessed January 2015.

[j] HRSA. http://muafind.hrsa.gov/

[k] CMS.gov. Eligible hospital information website. Available at http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Eligible_Hospital_Information.html. Last accessed January 2015.

[l] CMS.gov. Shared savings program website. Available at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/index.html?redirect=/sharedsavingsprogram/. Last accessed January 2015.

[m] CY 2015 Revisions to payment politics under the Physician Fee Schedule and other revisions to Medicare Part B (CMS-1612-P). Fed Registr. 2014;79:67547-68010. Available at https://www.federalregister.gov/articles/2014/11/13/2014-26183/medicare-program-revisions-to-payment-policies-under-the-physician-fee-schedule-clinical-laboratory. Last accessed January 2015.

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. All PQRS measures will be used for public reporting on Physician Compare and for the quality component of the Value-Based Payment Modifier.[n]

Rural – This term has been defined in many ways, most often in terms of non-urban status. The Federal Office of Rural Health Policy (FORHP) defines rural as located outside a Metropolitan Statistical Area (MSA), or located in a rural census tract of a MSA as determined under the Goldesmith Modification or the Rural Urban Commuting Areas. [o]

Rural Health Clinic (RHC) – RHC is a federally qualified health clinic certified to receive special Medicare and Medicaid reimbursement. RHCs are required to be staffed by a team that includes one mid-level provider, such as a nurse practitioner (NP), physician assistant (PA), or certified nurse midwife (CNM), that must be on-site to see patients at least 50 percent of the time the clinic is open, and physician (MD or DO) to supervise the mid-level practitioner in a manner consistent with state and federal law. RHCs are only required to provide outpatient primary care services and basic laboratory services and must be located within non-urban rural areas that have health care shortage designations. [p]

Small Hospital – A hospital defined as 49 available beds or less, as reported on the hospital's most recently filed Medicare Cost Report. [q]

Small Clinician Practice – For the purposes of this report, small clinician practices are defined as those with <10 eligible professionals.

Telehealth – The use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration is called telehealth. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications.[r]

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[n] CMS.gov. Physician quality reporting system website. Available at http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/index.html?redirect=/PQRS/. Last accessed January 2015.

[o] HRSA. How is rural defined? http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Introduction/defined.html

[p] HRSA. http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Introduction/ruralclinics.html

[q] HRSA. Small Rural Hospital Improvement Program (SHIP) http://www.hrsa.gov/ruralhealth/about/hospitalstate/smallimprovement.html

[r] HRSA. Telehealth. Available at: http://www.hrsa.gov/ruralhealth/about/telehealth/

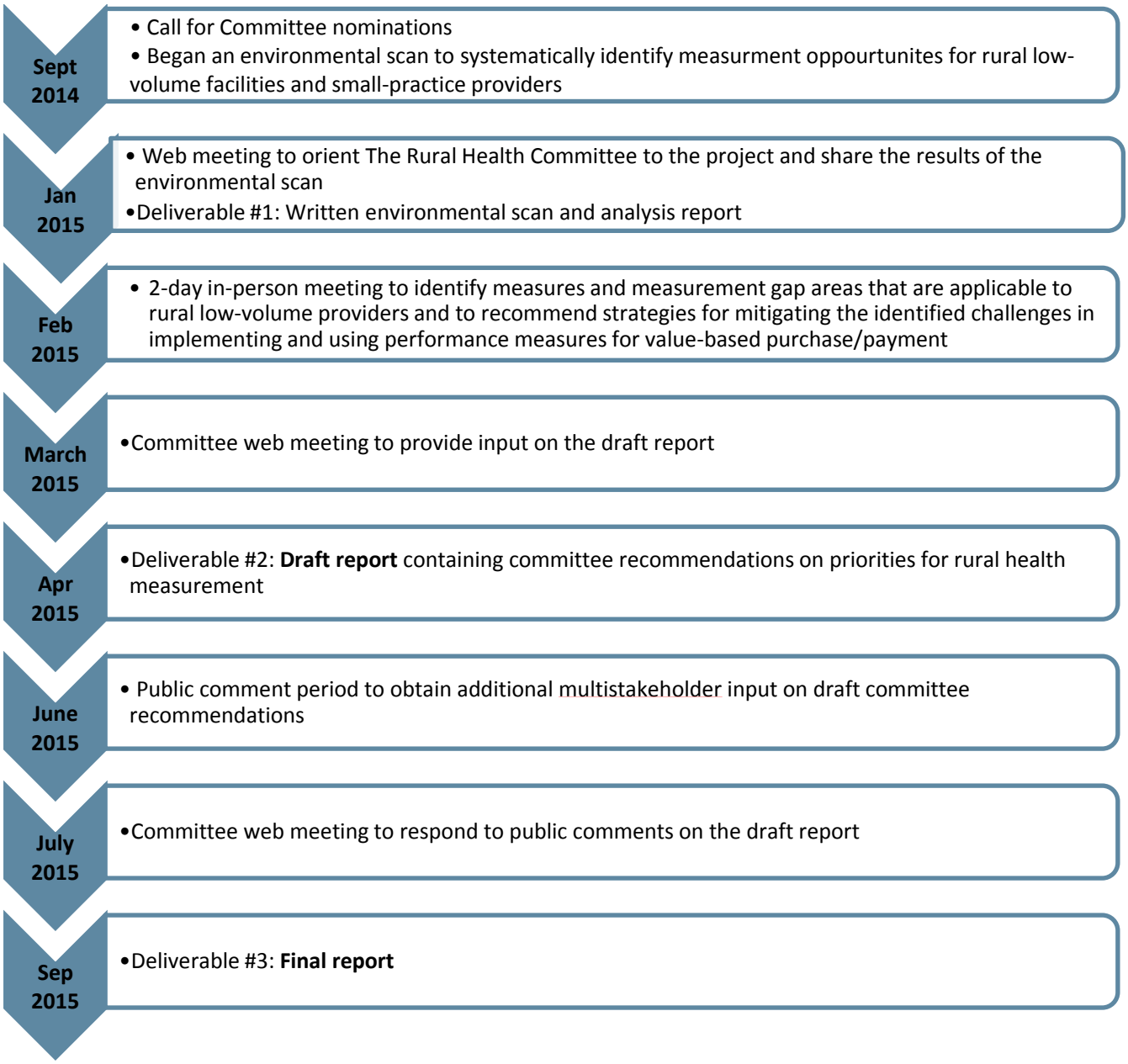
Telemedicine – For purposes of Medicaid, telemedicine seeks to improve a patient's health by permitting two-way, real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment.[s]

Value-Based Payment Modifier – The VBPM program (also known as the Value Modifier) is a pay-for-performance program that provides differential payment to physicians or physician groups who are paid under the Medicare Physician Fee Schedule (PFS). The payment adjustments are calculated based upon the quality of care furnished compared to the cost of care during a performance period. High-quality and/or low-cost groups can qualify for upward adjustments in payments, while low-quality and/or high-cost groups or groups that fail to satisfactorily report measures to PQRS are subject to downward adjustments in payment. This program will be implemented in several phases. In 2015, the Value Modifier will be applied to physicians in practices of 100 or more eligible professionals (EPs), based on their 2013 performance. In 2016, the Value Modifier will be applied to physicians in practices of 10 or more EPs, based on their 2014 performance. Beginning in 2017, the Value Modifier will be applied to all physicians, regardless of group size (although groups with <10 EPs will not be subject to negative payment adjustments). In 2018, the Value Modifier also will be applied to non-physician EPs.[t]

[s] Medicaid.gov. Available at: http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Telemedicine.html

[t] CMS. Value-Based Payment Modifier. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html#What is the Value-Based Payment Modifier (Value Modifier)

Appendix B: Project Timeline



Appendix C. Rural Health Committee Members

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References Consulted

Aetna, Inc. Aexcel Performance Network Designation Measurement Methodology 2014. Hartford, CT: Aetna, Inc;2014.

Bellamy GR, Bolin JN, Gamm LD. Rural Healthy People 2010, 2020, and beyond: the need goes on. *Fam Community Health*. 2011;34(2):182-188.

Buck S, Putnam T, Pratt ME. *Public Reporting of Quality by Critical Access Hospitals: The Key Issues*. Duluth, MN: National Rural Health Association; 2012.

Casey MM, Prasad S, Klingner J, et al. Are the CMS hospital outpatient quality measures relevant for rural hospitals? *J Rural Health*. 2012;28(3):248-259.

Casey M, Hung P, Moscovice I. *Quality Reporting for CAHs and Rural PPS Hospitals: The Potential Impact of Composite Measures*. Minneapolis, MN: University of Minnesota Rural Health Research Center; 2012.

Casey MM, Moscovice I, Klingner J, et al. Rural relevant quality measures for critical access hospitals. *J Rural Health*. 2013;29(2):159-171.

Casey MM, Prasad S, Klingner J, et al. Are the CMS hospital outpatient quality measures relevant for rural hospitals? *J Rural Health*. 2012;28(3):248-259.

DesRoches CM, Worzala C, Joshi MS, et al. Small, nonteaching, and rural hospitals continue to be slow in adopting electronic health record systems. *Health Aff (Millwood)*. 2012;31(5):1092-1099.

Goodrich K, Garcia E, Conway PH. A history of and a vision for CMS quality measurement programs. *Jt Comm J Qual Patient Safe*. 2012;38(1):465-470.

Gregg W, Moscovice I, Remus D. *The Implementation of Pay-For-Performance in Rural Hospitals: Lessons from the Hospital Quality Incentive Demonstration Project*. Minneapolis, MN: Upper Midwest Rural Health Research Center; 2006. Working Paper 2.

Hart LG, Larson EH, Lishner DM. Rural definitions for health policy and research. *Am J Public Health*. 2005;95(7):1149-1155.

Health Policy Brief: Pay-for-Performance. *Health Aff Blog*; October 11, 2012.

Health Resources and Services Administration (HRSA). *The Telehealth Grant Network Program (TNGP)*. Washington, DC:HRSA; 2013. Last accessed: January, 2015. http://www.hrsa.gov/ruralhealth/about/telehealth/telehealthnetworkgp.pdf

HHS. Better, smarter, healthier: In historic announcement, HHS sets clear goals and timeline for shifting Medicare reimbursements from volume to value [press release].Washington, DC:HHS.gov; January 26, 2015. Available at: http://www.hhs.gov/news/press/2015pres/01/20150126a.html. Last accessed May 2015.

Higgins A, Veselovskiy G, McKnown L. Provider performance measures in private and public programs achieving meaningful alignment with flexibility to innovate. *Health Aff (Millwood)*. 2013;32(8):1453-1461.

Institute of Medicine. *Vital Signs: Core Metrics for Health and Health Care Program*. Washington, DC: The National Academies Press; 2015. Available at http://www.iom.edu/Reports/2015/Vital-Signs-Core-Metrics.aspx. Last accessed May2015.

Integrated Healthcare Association (IHA). *The California Pay for Performance Program. The Second Chapter Measurement Years 2006-2009*. Oakland, CA:IHA;2009.

IHA. *IHA Pay for Performance Measure Set Strategy: 2012-2015*. Oakland, CA:IHA; 2012

iVantage Heatlh Analytics. *Vulnerability to Value. Rural Relevance under Healthcare Reform 2015*. Portland, ME: 2015. Available at http://www.ivantageindex.com/rural-healthcare-in-america-2015/. Last accessed April 2015.

Landon BE, Normand ST. *National Voluntary Consensus Standards for Ambulatory Care: Measurement Challenges in Small Group Settings*. Washington, DC:National Quality Forum; 2006.

Litaker J, Chou J. *Review of Performance Measures to Support a Quality-Based Payment Program*. Austin, TX:Texas Health and Human Services Commission. February 2012. Available at https://www.hhsc.state.tx.us/about_hhsc/AdvisoryCommittees/med-chip-qbp/docs/Quality-Based-Payment-Advisory-Committee-report-from-Litaker-Group.pdf. Last accessed January 2015.

Mathematica Policy Research. *Independent Evaluation of the Ninth Scope of Work, QIO Program: Final Report*. Baltimore, MD:CMS; 2011. Available at http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityImprovementOrgs/Downloads/MPRReport.pdf. Last accessed January 2015.

Medicare Access and CHIP Reauthorization Act of 2015, H.R. 2, 114th Cong, 1st Sess (2015), P.L. 114-10. Available at https://www.congress.gov/bill/114th-congress/house-bill/2/text. Last accessed May 2015.

MedPAC. Serving rural Medicare beneficiaries. In: *Report to the Congress: Medicare and the Health Care Delivery System.* Washington, DC:MedPac;2012:115-137

Meit M, Knudson A, Gilbert T, et al. *The 2014 Update of the Rural-Urban Chartbook*. Grand Forks, ND; 2014. Available at http://ruralhealth.und.edu/projects/health-reform-policy-research-center/pdf/2014-rural-urban-chartbook-update.pdf. Last accessed January 2015

Moscovice I, Rosenblatt R. Quality-of-care challenges for rural health. *J Rural Health*. 2000;16(2):168-176.

Moscovice I, Wholey DR, Klingner J, et al. *Measuring Rural Hospital Quality. University of Minnesota Rural Health Research Center Working Paper #52*. Minneapolis, MN: University of Minnesota Rural Health Research Center;2004.

National Advisory Committee on Rural Health and Human Services. *Physician Value-Based Payment Modifier Program Policy Brief*. Washington, DC: HRSA; December, 2011. Available at

http://www.hrsa.gov/advisorycommittees/rural/publications/modifierprogram.pdf. Last accessed January 2015.

National Advisory Committee on Rural Health and Human Services. *Value-Based Purchasing Demonstrations for Critical Access and Small PPS Hospitals*. Washington, DC:HRSA; 2011. Available at http://www.hrsa.gov/advisorycommittees/rural/publications/wpvaluebasedpurchasing092011.pdf. Last accessed January 2015.

Nawal Lutfiyya M, Bhat DK, Gandhi SR, et al. A comparison of quality of care indicators in urban acute care hospitals and rural critical access hospitals in the United States. *Int J Qual Health Care*. 2007;19(3):141-149.

Rosenthal M., Abrams MK, Bitton A, et al. *Recommended Core Measures for Evaluating the Patient-Centered Medical Home: Cost, Utilization, and Clinical Quality*. New York, NY:The Commonwealth Fund; 2012.

Upper Midwest Rural Health Research Center. *Rural Emergency Department Staffing: Potential Implications for the Quality of Emergency Care Provided in Rural Areas*. Minneapolis, MN: Upper Midwest Rural Health Research Center;2007. Policy Brief.

Gamm LD, Hutchison LL, Dabney BJ , et al. *Rural Healthy People 2010: A Companion Document to Healthy People 2010 Volume 1*. College Station, TX: The Texas A&M University System Health Science Center. 2003. Available at http://srph.tamhsc.edu/centers/rhp2010/Volume1.pdf. Last accessed January 2015.

Samuel CA. Area-level factors associated with electronic health record adoption and meaningful use in the Regional Extension Center Program. *J Am Med Inform Assoc*. 2014;21(6):976-983.

Shin P, Markus A, Rosenbaum S, et al. Adoption of health center performance measures and national benchmarks. *J Ambul Care Manage*, 2008;*31*(1),69-75.

Size T. Small numbers matter. *RWHC Eye On Health Newsletter*; May 1, 2007. Available at http://www.rwhc.com/Portals/0/eoh07/May.pdf. Last accessed at January 2015

Zaslavsky AM. Statistical issues in reporting quality data: small samples and casemix variation. *Int J Qual Health Care*. 2001,13(6):481-488.

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