

Health Care Quality: The Rural Context

**A Report to the Secretary,
U.S. Department of Health and Human Services**

**The National Advisory
Committee on Rural Health
and Human Services**

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About the Committee

The National Advisory Committee on Rural Health and Human Services is a 21-member citizens' panel of nationally recognized experts that provides recommendations on rural health and human services issues to the Secretary of the Department of Health and Human Services.

The Committee was chartered in 1987 to advise the Secretary of Health and Human Services on ways to address health care problems in rural America. Chaired by former South Carolina Governor David Beasley, the committee's private and public-sector members reflect wide-ranging, first-hand experience with rural issues—in medicine, nursing, administration, finance, law, research, business, and public health.

For the first 15 years of its existence, the Committee focused only on health issues. In 2002, the Secretary expanded the focus of the Committee to include human service issues as an outgrowth of the Secretary's Rural Task Force. The Task Force spent a year examining how the U.S. Department of Health and Human Services could better serve rural communities, and one of the key findings of the resulting report is that health and human services are closely linked. In recognition of this link, the Secretary added five new members, all experts in the areas of delivering human services in rural communities, to the re-named Committee (NACRHHS). These Committee members will be appointed by June of 2003.

Each year, the Committee, which meets three times a year, submits a report on rural issues to the Secretary. In addition to the report, the Committee may also produce white papers on select policy issues. This report on health care quality is the result of the work of the Committee during the past 12 months.

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Executive Summary

Health quality and patient safety has been of interest to the National Advisory Committee on Rural Health and Human Services throughout its tenure. The Committee has issued a series of recommendations on this topic since 1988. Most recently, the Committee published a report on Medicare reform in 2001, which included a chapter on quality as it relates to Medicare. The issue of health care quality, though, has implications beyond Medicare. Because of that, the Committee has decided to revisit this issue in greater detail and devote its 2003 annual report to this topic.

This report seeks to examine the current state of the debate over health care quality and patient safety and how it affects rural communities. The focus on improving quality and reducing medical errors has been gaining momentum for the past few years thanks to the release of the Institute of Medicine's 1999 Report, *To Err is Human*, and two subsequent reports focusing on health quality. These reports, as well as efforts by the National Health Quality Forum and several influential business groups, have put the issue of quality near the top of the nation's health care agenda. This has been a welcome development, but while the Institute of Medicine (IOM) reports have spurred an important dialogue on this issue, there has been little attention to the rural implications.

The Committee believes that there are important distinctions between the rural health care delivery system and its urban and suburban counterparts, and that those distinctions are important to understand within the larger debate. The difference is driven primarily by scale and scope. The urban setting features a

high volume of patients with an emphasis on inpatient care and technology-intensive services. The rural setting focuses more on ambulatory care and features a much lower patient volume. This is not to say that rural residents should expect or receive a lower quality of care. But, as the health care system takes new action to improve patient safety and to ensure the quality of health care services, it is important that any interventions take into account the unique circumstances of rural health care providers, patients and their communities. There are examples where this has not occurred. One is in the area of accreditation. Past efforts in this area have not recognized the simple fact that rural facilities are less likely to take part in accreditation activities such as the Joint Commission on the Accreditation of Health Care Organizations (JCAHO) because of a perception that the process is not always relevant to them. There are many other examples as well.

While health service researchers have brought a great deal of energy to the larger global issues of quality and patient safety, they have given only limited attention to the rural context. The Medicare Payment Advisory Commission (MedPAC) and a small number of rural health services researchers have tried to shed light on the rural issues in recent years, but more work needs to be done.

The Federal government continues to play a strong role in any activity relating to health quality and patient safety. The Centers for Medicare and Medicaid Services (CMS), the Agency for Health Research and Quality (AHRQ) and the Health Resources and Services Administration (HRSA) all administer

programs that have a direct role in ensuring quality of care and patient safety. The Medicare conditions of participation and other regulatory requirements are among the more visible policy levers for ensuring patient safety and promoting health quality. This is particularly true for rural communities, which are more dependent on Medicare and Medicaid revenue than their urban counterparts. CMS' Quality Improvement Organizations (QIOs) are charged with helping Medicare providers across the country improve the quality of care delivered to beneficiaries. AHRQ's ongoing research and demonstration work in health care quality is relevant for the entire health care system. HRSA, through a number of its grant programs for community health centers and rural hospitals, provides needed resources at the community level for specific quality activities.

Although all of these programs play a key role, there is also considerably more they could do to meet the needs of rural communities. The Committee provides a series of recommendations to begin that process. The Committee also offers a framework for improving quality in our health care system in a way that includes rural providers and patients in a fair and equitable manner. The Committee believes that rural communities may provide the best starting point for identifying and testing new strategies for improving health care quality and protecting patient safety. The Committee hopes this report will support a renewed focus on quality improvement activities within the Department that engages rural communities and providers, and that also ensures that these efforts permeate throughout all of the relevant parts of the health care system.

Introduction

Improving the quality of health care delivered across America is neither a rural or urban issue but rather a concern that touches all providers and consumers of health care services. The country stands at a crossroad on health quality issues. The findings of the IOM's 1999 report *To Err is Human* and its follow-up 2001 report, *Crossing the Quality Chasm: A New Health Care System for the 21st Century*, are a call to action for the entire health care system. In 2002, IOM released a third report, *Leadership by Example*, which challenges the Federal

government to take necessary legislative and administrative measures to serve a leadership role for the nation in improving quality and safety.

IOM's reports have put a new spotlight on the issue of quality and been part of a larger awakening across the spectrum of stakeholders. The Leapfrog Group, a consortium of more than a hundred Fortune 500 companies, other large private and public healthcare purchasers and some hospital members, has also gotten involved in the emerging health care quality debate. This business group has identified three initial patient safety standards for urban hospitals as the focus for health care provider performance and hospital utilization by beneficiaries of Leapfrog members. They would purchase care from facilities utilizing the following criteria:

- Computerized physician order entry of medications
- Intensive care unit physician staffing by specialized intensivists
- Evidence-based hospital referrals

It is important to recognize, however, that there is concern about requiring an intensivist at every facility. Other alternatives such as having a regional intensivist who can monitor patients in the ICU via telehealth technology may be appropriate. Likewise, a regional approach would be reasonable for computerized physician order entry. The challenge lies in understanding what these kinds of quality standards mean for rural communities and whether they are relevant. While the Leapfrog Group initially focused on urban measures, the Group has recently devoted attention to consideration of patient safety standards for rural

Six Dimensions of Quality

As reported in the IOM report, *Crossing the Quality Chasm*, there are six aims to strive for in order to improve the quality of care. These aims are neither urban nor rural, but universal, and provide orientation for where rural communities need to focus. However, working to achieve these goals may require different approaches, considerations, etc. They are the following:

- Safe Care—avoiding injury to patients
- Effective care—providing services based on scientific knowledge
- Patient-centered care—providing care that is responsive to individual patient preferences
- Timely care—reducing waits and harmful delays
- Efficient care—avoiding waste
- Equitable care—permitting no variation in quality because of geographic location, etc.

An E-ICU: A New Quality Initiative?

New and emerging technologies are often cited as a way to improve quality of care and a Virginia-based health care system believes it has harnessed technology to reduce staff demands and improve quality of care in its intensive care units.

For years, Sentara Healthcare has been dealing with a shortage of both critical care physicians and nurses. As a result, some hospitals have been forced to staff ICUs with less experienced nurses. Research has shown that ICUs staffed by critical care specialists have lower mortality rates than those staffed by other providers. Because an estimated 500,000 out of the four million people admitted to ICUs die, proponents are claiming that approximately 54,000 can be saved if the ICUs are staffed by critical care physicians.¹

Sentara created an electronic ICU (eICU) where specialist physicians and nurses monitor and help treat critically ill patients

in widely scattered hospitals. Each patient in the eICU has a computer screen which displays vital signs (heart and respiratory rates, BP and temperature), oxygenation, lab tests, etc. When the measures or lab tests deviate from the patient's baseline, it triggers a visual alarm. This allows the specialists to be able to respond to the patient in a timely manner. In addition to being able to monitor patients from offsite, specialists also have access to a database of clinical guidelines to help guide treatment. The eICU is only closed from 7 am – 12 pm (when the specialists are making rounds).

One eICU affiliated with Norfolk General showed a decrease in mortality rates by 28% and the other eICU showed a decrease of 21% during the six month period after connecting to the eICU. When comparing to the total number of patients admitted to all four units the previous year, statistics suggest 90 patients survived who would have previously died.

hospitals, realizing that their focus needed to be system-wide.

The National Quality Forum (NQF) has also been a national leader on health care quality issues. NQF has brought together a diverse membership that includes consumers, public and private purchasers, employers, health care professionals, provider organizations, health plans, accrediting bodies and labor unions. The members of NQF are working to promote a common approach to measuring health care quality and fostering system-wide capacity for quality improvement.

These private, pay base initiatives are important steps. Most quality experts believe that any movement toward improving quality has to be a joint public-private effort. However, as Leapfrog, NQF and related regional business alliances move toward "report cards", they must also remember the rural context. The rural infrastructure is much more vulnerable in its private pay base than it is with public programs such as Medicare or Medicaid. The private-pay insurance population is often more mobile, ready to seek care elsewhere if doubts are raised locally as a result of report card type activities.

Training and Technology

Telehealth and other health care technology-focused applications continue to gain greater acceptance and use by health care practitioners, particularly as a way to improve quality of care. In general, health care professional training programs have failed to incorporate this into training curriculum in any meaningful way. That has forced practitioners to learn and adapt health care technology on the job, which greatly slows the diffusion of skills needed to take advantage of new technologies and the potential they hold for improving quality of care.

The Federal Government, through its administration of health programs such as Medicare and Medicaid as well as the Department of Veteran Affairs and a host of other programs has a definite stake in ensuring quality across the health care system. And, as the IOM's most recent report notes, the Federal Government, by virtue of its size and breadth, may be in the most advantageous position for driving that change.² Together, the various public and private sectors are focusing on how to improve health quality in a more coordinated and sustainable fashion. In so doing, they are responding to a rapidly changing health care environment.

The introduction of new and more affordable technology, the rapidly expanding use of pharmaceutical drugs to treat an ever-growing number of diseases and conditions, along with the great potential of using modern technology to share information and improve decision making, hold great potential for improving the way we treat illness.³

The promise of this technology is as true for the small hospitals and other providers in the country's rural areas as it is for the large tertiary care centers, teaching hospitals and specialty care providers in urban areas. There can be no compromise related to geography in ensuring the delivery of high quality care. The challenge is in answering the charge from IOM and others by responding to and addressing the very different challenges faced by health care providers. This must take into account varying financial, technological and human resources, and different mixes and volumes of patients. The current health care system and its ability to ensure high quality health care delivery is quite variable across rural communities, and a richer understanding of that variability is needed.

This variability, if continued, has the potential for putting rural America at a disadvantage by failing to identify, study, apply and develop approaches that account for the special circumstances of providing quality care in sparsely populated rural areas. It may also result in a failure to provide the means with which to ensure some degree of equity in terms of resources for all providers and patients.

The Committee seeks to ensure this does not happen. This report is an attempt to inform the broader debate about quality by providing the rural context. That requires an examination of how health care is delivered in rural communities and what that means within the larger discussion of health care quality. The report will examine some of the current quality activities underway within the U.S. Department of Health and Human Services and how those initiatives affect rural communities, and will make recommendations on those issues to the Secretary. It will then close with a vision for how future quality efforts can be as useful in rural communities as they are in urban and suburban communities across the country.

Health Care Quality: The Rural Context

1. Quality in the Rural Context

The general concept of health care quality does not change from urban to rural settings. The focus remains on providing the right service at the right time in the right way to achieve the optimal outcome. The only rural-urban variable within that equation is the context. While the notion of quality remains constant, the settings in which the care is provided—including their structures and processes (e.g., transferring patients to larger facilities vs. being able to keep them for observation)—can be quite different.

The most elementary differences have to do with scope and scale. The urban setting features a high volume of patients with an emphasis on technology-intensive and inpatient services. The rural setting focuses more on ambulatory care and features a much lower patient volume. Rural health care systems tend to take care of more elderly patients and patients with more advanced or chronic conditions possibly due to the delays in getting health care. Rural residents, particularly those located in more isolated and sparsely populated communities, have higher risk factors than the general population.⁴ Rural areas also face greater shortages of health care providers such as radiology technicians, pharmacists, nurses and, particularly, specialists. In addition, reimbursement for providers who practice in rural areas tends to be less than their urban counterparts, particularly for Medicare patients.⁵ While issues of workforce and reimbursement are not explicitly quality issues,

they do impact the system's ability to produce quality care.

None of these factors, in and of themselves, means that rural residents should expect or receive a lower quality of care. Many sectors of the health care system face unique challenges. At the same time, all of these factors have an impact on rural health care providers and the communities they serve.

Many rural advocates believe that the reimbursement system, with its emphasis on administered pricing and inpatient care that centers on the use of new medical technologies and procedures, is designed for a high-volume healthcare environment with a large population. Few of these characteristics apply in the rural environment. Added to this is the paradox that many rural providers, particularly small hospitals, tend to have positive overall

Volume and Errors

When looking at errors in rural hospitals, it is important to focus on not only the number of errors, but also the type. As noted in the working paper, “The Environmental Context of Patient Safety and Medical Errors,” a possible connection between volume and error type is noted. The authors infer that different types of errors are made at low-volume versus high-volume facilities. For instance, lower volume facilities tend to have more errors due to “under-learning” while higher volume facilities have more errors due to “over-learning.”⁶

Rural Medical Error Study Offers a Framework

Initial findings from a study of medication errors in four rural hospitals in Nebraska show that these facilities had error rates similar to those found in prevailing national medication error reports.

The Nebraska Center for Rural Health Research at the University of Nebraska Medical Center is piloting a project to evaluate a system of data collection and analysis regarding medication errors in four small rural hospitals in southeast Nebraska. The purpose of the project is to determine if pooled data and shared resources can overcome rural barriers to patient safety and quality. An interim evaluation of 225 error reports completed seven months after the project was implemented shows that the severity and nature of the medication error reports from the four pilot hospitals were similar to those in the U.S. Pharmacopeia's national MedMARx database of medication error reports.

Specifically, 98% of the errors reported by the four pilot hospitals and 96% of errors reported to MedMARx did not result in patient harm. The majority of reported errors in both databases occurred during the administration and documentation phases of the medication administration process. The three most frequent error types in both databases were omission, wrong dose, and wrong drug.

The authors emphasize two emerging lessons from the interim evaluation. First, aggregation of data with resource sharing and a common reporting form can overcome barriers in small rural hospitals so that the baseline measurement and monitoring of patient care processes necessary for patient safety and quality improvement initiatives is provided. Second, the overall quality and systems problems present in medication administration in four small rural hospitals are similar to those in the larger, urban facilities represented in the MedMARx database.

margins, but negative Medicare margins. Even so, rural hospitals are highly dependent on Medicare revenue and although private payers pay them above cost, this represents a smaller proportion of their payment base when compared to urban hospitals. A resource disparity for many rural health care providers exists because of scale and an inability to build reserves for special investment purposes such as expensive information systems, which can be a means toward quality improvement. Some rural advocates point to Medicare policy that pays rural providers at a lower level than their urban counterparts as contributing to the resource gap.

Rural providers have also struggled to fit into urban-based quality measures. For example, the Joint Commission on the Accreditation of Health Care Organizations (JCAHO) accredits hospitals, and that stamp of approval has become a proxy for quality health care. JCAHO accreditation, however, is another example of the rural-urban difference. While the JCAHO accreditation is a staple of urban facilities, some rural advocates or rural providers themselves question the value of the process in terms of the relevance of the measures. Of the approximately 2,200 rural hospitals in the United States, 58 percent are currently accredited by the JCAHO.⁷

The reasons for this moderately low participation rate are varied. The JCAHO process is expensive and time consuming. Rural facilities with minimal financial and staffing resources often opt not to seek JCAHO accreditation. Still other rural hospital administrators say the process has little relevance for rural providers and is primarily geared toward urban providers. Many rural providers complain that the process diverts valuable resources in both personnel and associated computer costs.

Nonetheless, rural hospitals and other healthcare providers meet standards of care as related to quality, for the purpose of complying with Medicare conditions of participation,

state licensing regulations and pressure from commercial payers. In the special case of Critical Access Hospitals, there is a full on-site review for certification as a CAH, with a second review one year later. JCAHO has also developed an accreditation process for CAHs.

In 1997, JCAHO began an initiative named ORYX to build performance-based outcome measures into its accreditation process. While numerous vendors stepped forward to supply hospitals with JCAHO-approved performance measurement systems, only a few catered to smaller rural facilities. Rural hospitals not participating in the JCAHO accreditation default to the state survey and certification

Technology Can Alter Local Perceptions of Care

The perception of quality often plays a self-fulfilling role in rural communities.

A recent study by the University of California-Davis⁸ looked at the role technology played in local perceptions of quality of care. The study, "Perceptions of Local Healthcare Quality: The Impact of Telemedicine on Seven Rural Communities," looked at seven Northern California rural communities. UC-Davis surveyed them over the phone before telemedicine was introduced into their community and then again, approximately one year after initiation of the technology. Each participant community was chosen because it is considered a medically underserved area (MUA), a medically underserved population (MUP), or a health professional shortage area (HPSA). A randomized, controlled design study was implemented to obtain 500 completed pre- and post-telemedicine surveys, respectively. Resi-

dents were asked about their perception of the quality of their local health care system, understanding of telemedicine, use of community and non-community primary and specialty medical services, and reasons why they would travel outside their community for health care services. Between April 2000 through September 2001, 182 consultations from 16 clinical specialties occurred with the help of telemedicine. Results of the questionnaire surveys showed that residents' opinions towards the quality of local health care increased favorably after the introduction of telemedicine. In addition, the survey found that residents who perceived their local health care services to be of poor quality tend to leave their communities in search of services. Perception of health care quality is associated with patient satisfaction, which can have an impact on the financial viability of the community.

process which is the Federal Government's vehicle (through Medicare) for assuring quality. This is, however, a very weak vehicle since some states lack the expertise and resources. JCAHO, however, has indicated an interest in working with rural providers to address their concerns and some progress has been made. In recognizing the unique characteristics of some rural healthcare providers, JCAHO is reaching out to provide an accreditation process specifically tailored to Critical Access Hospitals, as is the American Osteopathic Association. While these are positive signs for the future, it remains to be seen whether these efforts are relevant and positively impact quality across the rural spectrum.

Collecting and analyzing data is fundamental to quality improvement, and clinical data reporting requirements help accomplish this objective. However, the infrastructure (human resources with quality knowledge, and technical resources such as information systems) necessary for making this happen require financial investments that rural facilities with fairly fragile financial circumstances will have trouble meeting. This is supported by the IOM report *Leadership by Example: Coordinating Government Roles in Improving Health Care Quality* which states that "a similar substantial grant program should be considered to assure the proliferation of an information technology infrastructure that can ultimately support clinical care and enable performance measurement as a seamless process."

New initiatives are needed which develop measures relevant to the types and characteristics of providers found in most rural communities. To date, the emphasis has been on the inpatient setting; most rural experts believe that the emphasis eventually needs to include the ambulatory setting. As IOM notes, "a large proportion of care, particularly in the management of chronic illness, is delivered from the

offices of small group practices or individual clinicians, settings for which very little quality measurement exists."⁹ This would allow the focus to also include quality measures for common conditions ranging from diabetes to depression.

By expanding the focus of quality activities, experts could also begin examining how new technologies are incorporated and how different levels of providers can work together. For example, patients needing extended stays in intensive care units (ICUs) should be treated by intensivist physicians, either locally or at a distance, as recommended by the Leapfrog Group. However, given the cost related to staffing ICUs in that manner, small ICUs treating few patients for short stays (presumably transferring others to larger institutions) as well as those treating patients for longer stays, need to provide quality care without intensivists on site. It is important to provide appropriate care regardless of the length of stay. This may mean using telecommunications to connect the intensivists to the staff on site (see Textbox on Tele-ICU on page 4). Other rural hospitals that are unable to treat patients in their ICUs (if they have them), will nonetheless need to be prepared to treat, or at least to stabilize, patients with conditions normally treated in an ICU. Appropriate standards would specify how that should be done.

2. Rural Quality: The Research Perspective

The body of literature focusing on quality of care in rural areas is relatively modest. Rosenblatt and Moscovice wrote one of the first major pieces that focused exclusively on the rural context of quality.¹⁰ Subsequent research has focused on JCAHO accreditation for rural hospitals and disease-specific quality studies with an eye toward teasing out rural and urban differences. Few of these studies have been national in scope.

In 2001, MedPAC produced its first-ever report focused exclusively on rural Medicare issues that devoted a chapter to the issue of quality.¹¹ The report noted that quality of care delivered to Medicare beneficiaries and the beneficiaries' use of recommended services was similar, with the only exception being those rural beneficiaries in the most isolated areas. Rural researchers and experts generally supported the points raised in MedPAC's discussion of rural Medicare quality issues.

There was, however, one notable exception. The primary difference of opinion centered on MedPAC's concern about low patient service volume in rural areas given what the Commission cites as mounting evidence that shows a link between higher volume furnished by acute-care hospitals and improved clinical outcomes. An analysis of the MedPAC report noted that the majority of services where the volume-outcome association has been made are for services not routinely provided in rural facilities, such as coronary artery bypass graft surgery, and are procedures for which rural populations are usually referred to urban facilities.¹²

The Committee's previous work on this issue concurs with findings of RUPRI as it relates to

A Rural-Urban Difference?

A study conducted by the University of Washington finds that smaller hospitals may be less likely to follow a standard of care for heart attack victims.

The study reviewed the records of 135,759 Medicare beneficiaries age 65 and above from February 1994 to July 1995 and examined the quality of care provided to Acute Myocardial Infarction (AMI) patients. It concluded that patients discharged from rural hospitals were less likely to receive several of the recommended AMI interventions than those discharged from urban hospitals. However, in no geographic classification (urban, large rural, small rural, remote small rural) were all hospitals adhering to all guidelines (for example, the percentage of patients receiving aspirin during the first 24 hours ranged from a high of 55.9% in urban areas to a low of 47.8% in remote small rural areas). The proportion of hospitals in urban and rural locations with complete adherence to all recommendations was nearly identical.¹³

concerns about volume. While volume is a commonly cited influence for factors that differentiate urban and rural settings, the Committee is concerned about relying strictly on volume-outcome measures of quality. It is, however, a proxy for a variety of other things that may be occurring, including the mix of providers available, their clinical background, the level of technical support for clinicians, the health status and usage patterns of the population, the availability of resources, and the access to services, to name a few. Furthermore, there is a significant need to expand

quality measurement and improvement beyond the inpatient setting.

The questions are how to ensure high quality for frequently performed interventions and how to address procedures that may not be frequently performed but still must be done in a time-sensitive way to achieve optimal patient outcomes. For example, the administration of clot-dissolving drugs in the event of myocardial infarction or stroke must be done promptly and cannot wait for transportation. Quality of care is compromised with a potential impact on patient outcomes if these procedures are not performed in a timely manner. Given the low volume of this procedure in a rural setting, it is unlikely it would stand up against an urban tertiary care center if assessed only through the standard volume-outcome relationship. For any individual patient, including those in a rural setting, the ability to provide that service is critical. In these situations, it isn't so much a question of volume versus outcome but rather an issue of measuring services that are either performed or not performed. The Committee believes that when volume-outcome measures are applied for rural facilities, they should reflect common rural procedures.

The Committee believes the infrastructure of rural health care delivery systems and the financial reimbursement system that supports it must assure that the system is able to provide quality care in those instances when time is critical. This would include the cost of stocking pharmaceuticals, having trained emergency medical technicians, maintaining diagnostic equipment, and having sufficient inpatient capacity. In many ways, there is a comparative link to what is being learned as the nation responds to the bioterrorism threat. Sometimes, the system has to accept "waste" or "inefficiency" because it needs the capacity to deliver a service when it is needed.

Given the infrequent demand and limited resource base, rural residents do not expect to have immediate access to the full range of clinical services that are available in most urban areas. However, people in smaller rural communities should have a base level of services available locally that includes, for example, the ability to stabilize patients prior to transfer to a distant facility. Several services should also include telehealth links that allow for the provision of some vital services via telehealth technology (such as teleradiology) that are not available locally. In the end there are standards of care that must be universally applied by which all providers should be judged. For instance, of those services provided in rural facilities, the quality of care and related patient outcomes should not vary by rural versus urban facilities or within rural facilities themselves. Rather, quality improvement efforts should be designed so that where performance does not measure up, rural facilities have the infrastructure and assistance within quality improvement programs to achieve the needed improvement in quality of care with the expectation that quality meets the established standard across the range of routine services. There are other standards that can be met only when there are sufficient resources (dollars and expertise) to do so.

3. The Federal Role

The Congress has pushed DHHS to take a leadership position on health care quality, and rightfully so. The reauthorizing and redirection of the Agency for Health Research and Quality (AHRQ) in 1999 from what used to be known as the Agency for Health Care Policy and Research is, perhaps, one of the most visible signs of a newfound focus on health care quality within DHHS. The agency has been designated as the lead Federal agency on quality of care research, with new responsibility to coordinate all Federal health care quality improvement efforts and health services research.¹⁴

In addition to AHRQ's work, several other DHHS agencies and operating divisions play a key role in promoting and ensuring quality health care services. The Centers for Medicare and Medicaid Services (CMS), through its administration of Medicare, Medicaid and the State Children's Health Insurance Program (SCHIP) has a number of ongoing activities focusing on quality improvement, although none of these programs has an express rural focus.

The Health Resources and Services Administration (HRSA) also has a stake in the ongoing push to ensure health quality, which includes the reduction of medical errors. HRSA administers a wide range of grant programs from community health centers and rural health outreach to large block grant programs such as Maternal and Child Health and the Ryan White program. While these programs affect all providers, rural communities are most directly impacted by the community health center program and those programs operated by the Office of Rural Health Policy (ORHP).

Federally qualified health centers, about half of which are either in rural areas or serve rural populations, have been involved in a number of HRSA-sponsored quality initiatives for the past few years. ORHP runs two small grant programs that focus on improving quality in rural settings. One focuses on quality activities as they relate to Critical Access Hospitals. The other focuses on small hospitals with 50 beds or less.

All of these agencies and offices play a key role in ensuring the quality of health care services and this report touches only briefly on the broad scope of quality activity that is going on across the Department. The Committee, however, believes that some of the specific quality activities within CMS, AHRQ, NIH and HRSA bear further attention.

CMS: Lost Opportunities for Rural?

CMS attempts to ensure quality through its survey and certification of clinicians and facilities, the use of conditions of participation regulations for health care providers and the ongoing efforts of the Quality Improvement Organizations (QIOs, which used to be known as Peer Review Organizations or PROs). Over the years CMS has invested in quality-focused demonstration programs, such as coordinated care demonstration programs, which may include rural participants. They have not initiated any rural-specific demonstrations. In each of these areas, CMS policies affect all providers but the policies have particular relevance for rural providers that serve a disproportionately higher percentage of Medicare beneficiaries than their urban and suburban counterparts.

RHCs: New Quality Guidelines

CMS also certifies and oversees the operations of more than 3,448 rural health clinics (RHCs), which are key access points across rural America and which are located in rural areas that are either health professional shortage areas (HPSAs) or medically underserved areas (MUAs). RHCs were authorized in 1977 to improve access to care for Medicare and Medicaid beneficiaries and receive reasonable cost reimbursement under Medicare. Approximately 70 percent of the RHC patient population is insured through Medicaid or Medicare.¹⁵

CMS is finalizing regulations that will create an expanded quality orientation for RHCs that was mandated in the Balanced Budget Act of 1997. That provision required that RHCs establish performance improvement measures through a Quality Assessment and Performance Improvement (QAPI) program and the final rule implementing that provision is expected to be issued early in 2003. The new rules will formalize what many RHC experts say these clinics have been doing all along. However, as noted earlier, Congress and DHHS need to also provide adequate resources and guidance to help providers respond to that charge.

The CMS program that most directly reaches out to providers to work on quality improvement at the community and state level is the QIO program. Participation with the QIO is voluntary on the part of the provider. Both this Committee and MedPAC have noted that the structure of the QIO program does not contain

strong enough incentives to encourage QIOs to work with rural providers to improve quality of care across a range of clinical conditions.²⁰

The QIOs are evaluated based on their ability to improve state-wide averages on a range of disease indicators. MedPAC notes in its June 2001 report that the QIOs face incentives to focus their national quality improvement activities on high-volume providers that tend to be in urban areas because that gives them the best chance for showing state-wide improvement.²¹ Consequently, QIOs, which operate on a fixed budget under contract to CMS, are less likely to focus their efforts on small low-volume environments.

The QIOs' new Seventh Scope of Work, issued in 2002, was very ambitious. It included, for the first time, a specific task for focusing on rural populations, paired with an option to also focus on underserved populations. In addition to the ongoing quality improvement projects that were similar to the prior scope of work, the new scope of work also included significant new activities in public education and reporting. The first phase of the public reporting began in November of 2002 with the release of comparative quality data for the 17,000 nursing homes across the country. Future plans call for similar releases of data for home health agencies and hospitals and physicians' offices. CMS, through the QIOs, is currently field testing some hospital reporting measures on a voluntary basis in Maryland, New York and Arizona.

Although public reporting is positive, there are some inherent challenges that face rural hospitals, home health agencies and physicians' offices. The demand for public reporting puts extra resource demands on small rural providers and they may need assistance in complying with the requirements.

Final Quality Assessment and Performance Improvement Condition of Participation for Hospitals

CMS published a new rule for hospitals instructing them to develop and implement quality assessment and performance improvement programs (QAPI) that will identify patient safety issues and aid in the reduction of medical errors. The rule also allows the implementation of information technology as part of the QAPI program.

Medicare Conditions of Participation for hospitals:

- Establish, implement, maintain and evaluate a QAPI program
- Have a QAPI program that reflects the complexity of the hospital's organization and services
- Have a QAPI program that is hospital-wide and focuses on maximizing quality of care outcomes
- Include preventive measures that foster patient safety, such as reducing medical errors

The final rule was published in the January 24, 2003 *Federal Register* and will be effective 60 days after publication.

While some consumer advocates welcomed the release of the data, it caused concern in the nursing home community. The move to public reporting put a great deal of pressure on the QIOs to offer assistance to these facilities to prepare them for this reporting process. The QIOs were thus under pressure to do more than they had previously done and to do so with less money than they received under the Sixth Scope of Work. CMS provided \$744 million

to QIOs under the Sixth Scope of Work but then considered providing only \$666 million under the Seventh Scope of Work. Subsequent negotiations between CMS and OMB resulted in an agreement to provide additional funds to support the work burden on the QIOs.²²

The requirements for public reporting are a step in the right direction, provided CMS works with the provider community and offers QIOs the financial support to make the process a success. The initial funding shortfall in the first year of the Seventh Scope is not a good start but the subsequent agreement to provide additional funds for QIOs to aid nursing homes in their public reporting offers some hope for the future. It is also important that in moving forward on public reporting that CMS focus on more than just outcome measures.

Outcome measures are helpful barometers, but for most patients in most situations, assurances that the process of care is of the highest possible quality is more important than specific outcomes. A health care provider might be tempted to focus on achieving publicly reported outcomes ("teaching to the test") while not devoting sufficient resources to improving the process of care.

The move toward public reporting by hospitals has created some concern, particularly among hospital administrators, about which measures will be reported on and how the data will be used. One of the chief complaints is that simple reporting of outcome measures fails to capture the full range of quality activities such as the prevention of errors, and any corrective actions taken after an error to ensure it doesn't happen again. In other words, there is little context given to the reported numbers.

Some rural administrators are concerned that hospitals (as well as nursing homes and home health agencies) with low volumes of patients

may have statistics that are skewed. For example, if a hospital sees just a few patients with a specific condition and just one outcome is bad, the percentage reported will be deceptively high. Others say simple objective measures fail to take into account health status and co-morbidities, both of which tend to be worse in rural areas. Finally, some providers are worried that a good faith effort at reporting the data may then be used against them in court. Any of those scenarios could potentially have a chilling effect on data reporting. The Committee believes that all of these issues need to be discussed and taken into account before the first public reporting takes place.

This is not to say that rural hospitals should not be a part of any reporting process. In fact, they should. However, CMS should consult with rural experts to address questions related to whether the posting of that data should be voluntary or mandatory or if it might be grouped together among similarly situated facilities.

To its credit, the hospital industry has taken a proactive approach to the planned reporting requirements. Late in December of 2002, the American Hospital Association (AHA), the Federation of American Hospitals (FAH) and the Association of American Medical Colleges (AAMC) announced plans to work toward having all U.S. hospitals voluntarily report outcomes of 10 quality measures relating to the care provided to patients, including millions of Medicare beneficiaries

The 10 measures in three disease areas to be initially reported in the joint program are in the areas of heart attack, heart failure and pneumonia. The measures adopted by AHA, FAH and AAMC are process measures rather than outcome measures and should work well across both large and small settings.

Managed Care and Quality Programs

Much of the quality improvement projects are done through managed care, which requires quality efforts through Medicare+Choice (M+C). Interestingly enough, Medicare fee-for-service (FFS) participation in quality improvement (QI) projects is purely voluntary, and that is where a lot of rural beneficiaries receive their care. The special task required for M+C is more focused and is not helpful to rural communities.

At one time, rural advocates were hopeful that the Seventh Scope of Work would include stronger incentives for QIOs to work with rural populations. The MedPAC report in June of 2001 generated considerable attention to the need for QIOs to do more with rural providers.

Despite that promising backdrop, the Seventh Scope of Work has failed to address some of the substantive rural concerns in how it is structured. Although CMS did add a task that allowed QIOs to work with rural populations, the task was combined with underserved populations. While the Committee applauds CMS' intent in trying to reach out to rural populations, it is concerned that including rural in the underserved population task will dilute this much-needed effort. For example, CMS relies on QIOs showing improvement on statewide averages and a QIO will find it much more cost effective to focus on a high-volume urban underserved population rather than reaching out to several isolated rural areas.

The pairing of rural and underserved in one of the QIO tasks also reflects, at best, a failure to

AHA, FAH, AAMC Voluntary Measures

Heart attack (Acute Myocardial Infarction)

- Was aspirin given to the patient when admitted to the hospital?
- Was aspirin prescribed when the patient was discharged?
- Was a beta blocker given to the patient when admitted to the hospital?
- Was a beta blocker prescribed when the patient was discharged?
- Was an ACE Inhibitor given for the patient with heart failure?

Heart failure

- Did the patient get an assessment of his or her heart function?
- Was an ACE Inhibitor given to the patient?

Pneumonia

- Was an antibiotic given to the patient in a timely way?
- Had a patient received a Pneumococcal vaccination?
- Was the patient's oxygen level assessed when admitted?

understand why QIOs have had difficulty reaching out to rural communities. At worst, this pairing undermines work in reaching underserved populations and looks more like an attempt to deflect criticism from rural advocates that the QIOs framework is biased against rural providers and the communities they serve.

The reality is the Seventh Scope of Work serves to ensure that the status quo continues. Preliminary findings of a study by the University of Minnesota shows that the Seventh Scope of Work appears to have only modest potential to increase QIO activities with rural hospitals.²³ In those states that are predominantly rural such as Montana, Wyoming or Maine, the QIOs will reach out to rural populations because they have to do so. However, in those states where there are both sizable rural areas and highly populated urban areas, the QIOs will still have powerful incentives to concentrate their work where the greatest numbers of people are located. The result is continuation of an unmet need and an opportunity lost for CMS to reach out and work with rural providers to improve quality in a substantive way. Those that nevertheless reach out to rural providers should be recognized and rewarded.

Should CMS seek to improve the ability of the QIOs to reach out to rural populations, the agency might also consider coupling this with renewed support for the survey and certification process. In its June 2001 report, MedPAC noted that the infrequency of surveys of facilities may affect rural providers more directly. These providers are most likely to rely on the survey and certification process to ensure quality as opposed to outside accreditation. The surveys for many types of facilities are performed infrequently for several reasons including inadequate funding levels.²⁴ Any effort to improve the ability of the QIOs and the survey and certification process would provide needed support for rural facilities as compared to their urban counterparts.

AHRQ: Increasing the Focus on Rural Health

The AHRQ has been very productive in supporting research and dissemination related to health care quality and, in the process, has also contributed significantly to elevating quality on the nation's health care agenda. The agency strives to achieve a balance between its ongoing research mission and its work on quality while also administering an ever-growing number of Congressionally earmarked projects.

The bulk of the agencies' quality activities have been global in scope. For example, AHRQ has worked with CMS to convene a meeting with other Federal agencies and interested groups to begin developing a public survey (patient satisfaction) tool to assess hospital performance. These kinds of activities have implications for both rural and urban communities. The agency has a Congressional mandate to support research, evaluation and demonstration projects in inner city and rural areas.¹⁷ Toward that end, AHRQ has supported some rural-focused activities and is currently funding several rural projects, including three rural quality projects. One study in Montana looks at the relationship between working conditions of health care providers and the quality of care in rural hospitals. Another study at the University of Colorado is developing and testing a patient safety reporting system that will be examined in several rural settings. The agency also is funding a study at the University of New Mexico that looks at diabetes prevalence among Native Americans.¹⁸ The Agency also worked with ORHP in HRSA to convene a meeting of rural experts in 2002 to examine issues related to quality and patient safety in rural communities. There are plans for a follow-up meeting and a joint paper by the participants.

Some rural advocates would like to see a more explicit emphasis on rural-specific quality and patient safety studies, but others are less critical. They point out that AHRQ has attempted to build a body of knowledge on quality that should be helpful to all of the health care delivery system, including rural providers. To this end, the Committee believes it may be helpful to have rural clinicians at the table with AHRQ to discuss the relevance of AHRQ projects and how to make them more applicable to rural areas.

One of the primary challenges faced by AHRQ is allocating its funding between its research mission and its quality mission in a way that supports analysis across the health care system.

Disparities Research at AHRQ

The Agency for Healthcare Research and Quality (AHRQ) has focused its funding on disparities in health care over the past several years. These investments have led to an increase in research that includes investigator-initiated research, new training programs and projects building on previous AHRQ-supported projects.

The current investments for minority and vulnerable populations are as follows¹⁶:

- Minorities - \$60 million
- Low Income - \$20 million
- Children - \$14 million
- Special Health Care Needs - \$14 million
- Urban - \$11 million
- Women - \$7 million
- Elderly - \$5 million
- Rural - \$3 million

Currently, the agency can fund only a small percentage of studies that are submitted. The Committee believes the real challenge is increasing the amount of resources available for quality-focused projects. The Committee does not believe the number of urban-focused projects should necessarily be reduced and redirected to rural projects. Rather, the Agency needs enough resources to meet its ambitious charge and to ensure that rural interests are adequately represented. To date, that has not happened. However, the President's 2004 budget includes a \$50 million initiative in AHRQ's patient safety line around hospital-based information technology solutions, which includes an emphasis on small community and rural hospitals.¹⁹

NIH

The National Institutes of Health (NIH) funds research projects that focus on health care delivery systems. Although a small portion of the NIH portfolio, these projects represent a big amount of funding given the recent increase in NIH funding. There are opportunities for NIH to work with AHRQ and thus to build a significant body of research focused on improving quality of care through improvements in the delivery system. For NIH this activity would be considered putting the best services into practice. This research would need to account for the unique nature of rural practice locations, which are influenced by fewer cases. Analyzing specific interactions may not present a valid portrayal of the quality of care in that institution because of low volume. The reality of limited volume and the limited range of care settings in rural areas may influence the practices used by rural providers. That context needs to be accounted for in any analysis of best practices.

HRSA: Small but Targeted Quality Efforts for Rural Hospitals

While AHRQ and CMS have the more visible Federal roles in promoting health quality and quality improvement, there are two small programs administered by HRSA that are reaching out to rural hospitals. These programs, the Rural Hospital Flexibility Grant program (Flex) and the Small Hospital Improvement Program (SHIP)²⁵, are relatively new, having been in existence for three years and one year, respectively. These two programs are but a small part of the overall HRSA portfolio which focuses more on programs that reach out to vulnerable communities such as the poor, the uninsured, those with HIV-AIDS and those reliant on maternal and child health programs.

The Flex Program provides approximately \$25 million to 47 eligible states for activities related to helping hospitals convert to Critical Access Hospital status, promoting rural health networks, integrating EMS and improving quality. The states get an average of about \$300,000 each to focus on any of the four program objectives. In several cases, the Flex funding has been used to create state-wide quality improvement networks that set benchmarks on common indicators to measure quality improvement. In FY 2002, approximately \$2.9 million of the Flex funding was used for quality improvement.

The SHIP program has provided \$15 million to rural hospitals to support quality improvement projects and/or to address issues related to transitioning to the new Medicare prospective payment systems and complying with the Health Insurance Portability and Accountability Act. A total of 1,400 hospitals received grants of slightly less than \$10,000 each in FY

Montana Uses Flex Money to Create a Quality Network

Montana is the birthplace of the Critical Access Hospital (CAH), so it's only natural that the state would be taking the lead on quality issues facing these small hospitals.

The State has used some of its grant funding from the Medicare Rural Hospital Flexibility Grant program to create a state-wide quality network among its CAHs. The network has allowed CAHs across the state to collaborate with each other on a variety of quality improvement activities, provider

education, medical staff credentialing and reporting. The facilities have worked with the State hospital association and the Flex program to pool data on key indicators and use those findings to set benchmarks for quality improvement. The Montana Quality Improvement Network has also worked with the Montana-Pacific Quality Health Foundation to promote the use of performance data for nursing homes, home health agencies and hospitals.

2002 with 28 percent of the hospitals using their funds specifically for quality improvement.

Respectively, the Flex and SHIP programs have supported approximately \$5 million in quality improvement projects in rural America in 2002. While that figure is encouraging, it also pales in comparison to the QIO program funding. More help may be on the way, however. The Congress created another grant program to address quality concerns in rural communities in the Safety Net Bill that passed late in 2002. This program, the Small Health Care Provider Quality Improvement Program, which will provide small grants to rural health clinics and small hospitals, has been authorized but has not yet received an appropriation.

While these activities have been a step in the right direction, they are but a small step. For example, the SHIP program's 2002 funding level of \$15 million resulted in an average award of just under \$10,000 for each of the 1,420 eligible hospitals. The Flex Program has played the role of a catalyst for rural activities

but quality is one of only several program priorities areas as outlined in the original legislation. These grant programs have been enormously helpful, yet they have barely begun to address the larger resource needs facing rural health providers.

4. A Vision for the Future

The Committee believes that any new strategies which emerge to address concerns over health quality need to have broad input and participation from the health care system. To date, the rural voice has not always been a part of those discussions. The history of the health care system has been dominated by a top-down diffusion strategy that has often served to isolate or ignore rural concerns. This has been true on the reimbursement side and the clinical side of health care where patterns of care, clinical research, and new technologies are often introduced and designed only with large tertiary care centers in mind. This model, unfortunately, has served to delay the introduction of new knowledge and practice patterns in rural areas given the time it takes for innovation to trickle down into smaller, often geographically isolated environments that are often resource challenged. Some rural advocates believe that when it comes to quality improvement, a “trickle down” strategy to rural areas will never work without addressing the existing resource inequities that exist between urban and rural providers. In addition, the ability to bring about real change and improved quality in rural environments requires a focus beyond inpatient care to also include the ambulatory and post-acute care setting and preventive elements of health. So far, the inpatient sector has received the bulk of the attention.

To date, the discussion has been largely global in nature. This runs the risk of assuming that rural communities are simply a subset of urban communities and that what works in urban areas will automatically be appropriate for smaller settings. This pattern has been true from the IOM studies to the bulk of the quality work done by AHRQ and CMS. It speaks to a fundamental failure to take into account how

rural health care delivery often has characteristics different from urban systems, including challenges in acquiring content on quality improvement for practicing professionals and in upgrading information systems. There are also differences in providers with different sets of skills and a different mix of patients, services and potential sample size. This is not to say that quality is lower now in rural areas, nor that patients treated by rural providers should not expect the highest possible quality care. Rather, the reality is that the environment is different. Quality improvement activities predicated on 500-bed tertiary care hospitals that focus on high-tech and resource intensive procedures have little relevance for small rural hospitals. Unfortunately, the majority of the quality discussion to date has failed to acknowledge urban-rural differences.

The ongoing debate and focus on quality, however, offer a new opportunity for the health care system in general and rural communities in particular. The rural setting may, in fact, be the optimal location to introduce new quality and patient-focused activities. In fact, in this instance, the entire health care system might be better served by a reversal of this typical diffusion model. As we look at ways to improve the quality of primary and ambulatory care and chronic care management (issues that resonate across the health care system regardless of geography), rural settings offer a unique laboratory. By testing new strategies in these communities and then allowing the successes to diffuse toward larger volume environments, we can ensure that we develop common sense solutions that can be translated to multiple environments.

The Committee believes it is time for a more inclusive examination of health quality that ensures improvement for each sector of the health care world. The debate should focus

Rural as a Test Bed

There are some inherent advantages in using rural communities as a test setting for quality improvement efforts. Many rural areas have geographically disparate patient populations that are fairly static, often with multiple generations living in relatively stable settings. This stability could allow researchers to analyze quality-focused innovations with a longitudinal focus more easily in rural areas than in more fluid suburban or urban areas. In fact, if one takes the approach championed by Don Berwick and other leading quality experts and begins focusing on disease-specific outcome questions, the assessment of quality is not near-term but long-term. That kind of longitudinal analysis of chronic care may be easier to conduct in rural settings.

more on what the future will bring rather than trying to retrofit past strategies that have served only to perpetuate the status quo. That lesson is true across both rural and urban settings.

The continuing debate over how to ensure access to high-quality health care services across the health care system is a unique opportunity to affect change, especially for rural providers and the patients they serve. They have often been left out of the discussion in the past and it is imperative that this does not happen again. As the Federal government and the private sector discuss ways to improve care, it is essential that rural interests be a part of that larger discussion.

To date, that is not happening. As the IOM notes in its most recent report, the Federal Government occupies an incredibly influential

position for promoting quality across the health care system and should use that position of authority to set the standard for improving quality of care in the health care system²⁶. The Committee would take that one step further. The Federal Government, and the Department of Health and Human Services in particular, have a responsibility for ensuring that its quality improvement activities work as well in rural communities as they do in urban communities. The Committee would further propose that the Federal Government and DHHS urge the key players in the private sector to take the same approach.

The Federal policy levers for promoting quality improvement in the health care sector are tied most directly to CMS and AHRQ. By and large, these activities have not proven very adaptable to rural providers. DHHS' quality efforts sometimes reflect an unintentional but very real urban focus that often is not relevant for rural communities. CMS' QIO program and AHRQ's current efforts are examples of this phenomenon.

The current pace of quality activities, initiatives, studies and findings continues to increase. That, overall, is one of the more positive developments in the health care system in the past few years. One of the challenges facing rural communities is reacting to so many possible directions all at once. NQF and DHHS can play a unique role in helping to link all the parties together. More discussion is needed to help rural leaders survive and grow in a world where people are increasingly "steered" from one provider to another based on "report cards". The Committee believes the health care system at large needs to move from this positive but somewhat chaotic state to some alignment where it can invest in improvement in a way that is relevant to all levels of care.

Recommendations

CMS

- The Secretary should work with CMS to promote demonstrations that examine how reimbursement might be used to promote quality improvement in the rural setting.
- The Secretary should increase funding for state survey and certification activities. The survey and certification agencies are consistently underfunded and this has a disproportionate effect on rural providers given their heavier reliance on using the survey and certification program and less reliance on accreditation compared to their urban counterparts.

Quality Improvement Organizations

- The Secretary should amend the Seventh Scope of Work for the Quality Improvement Program to make this program more relevant for rural communities. This would include creating a stand-alone task focusing on rural health. It would also include a new evaluation methodology for reviewing the work of the Quality Improvement Organizations that includes more localized measures of areas with populations that suffer health disparities. The sole reliance on measures of state-wide improvement acts as a disincentive for working with harder-to-reach populations.
- The Secretary should work with OMB to increase funding for the QIOs to encourage QIOs to reach out more meaningfully to rural communities and to help providers prepare for public reporting in hospital, home health and individual ambulatory provider settings.

Health Care Provider Reporting

- The Secretary should solicit (via *Federal Register* notice) input from rural health care entities in identifying which measures shall be used for public reporting for all healthcare providers and include not only outcome measures but also process measures. This activity should promote appropriate benchmarking that compares organizations with similar characteristics such as geography, size, and volume. This is very important as outcome measures require statistical significance frequently not available in a typical rural facility due to lower volumes or that may not be appropriate for rural facilities.

AHRQ and NIH

- The Secretary should work with AHRQ and NIH to ensure that each Agency's efforts to translate research to practice include a focus on rural health care quality issues as well as translation of findings to rural practice, dissemination and adoption of recommendations. AHRQ and NIH should also identify and examine "models that work" in rural areas.

HRSA

- The Secretary should work with the Congress to fund the new Small Health Care Provider Quality Improvement Program authorized in Public Law 107-251.
- The Secretary should support re-authorization of the Medicare Rural Hospital Flexibility Grant program in a manner that strengthens the program's orientation to promoting quality in Critical Access Hospitals.

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Acronyms Used in this Report

AAMC - Association of American Medical Colleges

ACE (Inhibitor) - angiotensin-converting enzyme inhibitor

AHA - American Hospital Association

AHRQ - Agency for Health Research and Quality

AMI - Acute Myocardial Infarction

CAH - Critical Access Hospital

CMS - Centers for Medicare and Medicaid Services

DHHS - Department of Health and Human Services

eICU - electronic intensive care unit

FAH - Federation of American Hospitals

FFS - fee-for-service

HPSA - health professional shortage area

HRSA - Health Resources and Services Administration

ICU - intensive care unit

IOM - Institute of Medicine

JCAHO- Joint Commission on the Accreditation of Health Care Organizations

M+C - Medicare Plus Choice

MUA - medically underserved areas

MUP - medically underserved population

NACRHHS - National Advisory Committee on Rural Health and Human Services (also known as NAC)

NIH - National Institutes of Health

NQF - National Quality Forum

ORHP - Office of Rural Health Policy

PROs - Peer Review Organizations (now known as Quality Improvement Organizations or QIOs)

QAPI - Quality Assessment and Performance Improvement

QI - quality improvement

QIOs - Quality Improvement Organizations (formerly Peer Review Organizations or PROs)

RHC - rural health clinic

S-CHIP - State Children's Health Insurance Program

SHIP - Small Hospital Improvement Program