The Rural Physician Peer Review Model©: A Virtual Solution

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Abstract

Evaluating quality of care through peer review is a challenge for physicians. Rural physicians have the added burden of close personal relationships and conflicts of interest. The Rural Physician Peer Review Model© presents an innovative solution to these problems that involves utilizing simple information technology to share HIPAA-compliant information, a systems approach to review, principles of patient safety/quality of care, and continuing education. The process involves network hospitals submitting patient cases to the central staff, deidentifying patient information, e-transmitting the cases, meeting by teleconference, and report writing by the physician moderator. Over 3 years, 934 patient cases have been reviewed in 209 teleconferences. Participating physicians report high levels of satisfaction with the objectivity of the reviews and new learning. Written evaluations of the teleconferences document that this impartial process promotes the inclusion of quality improvement and patient safety in peer review. Anecdotal evidence indicates increased use of system improvements.

Introduction

Monitoring and evaluating the quality of care through peer review is a continual challenge for physicians. Peer review is a time-honored tradition for physicians and has been considered by many to be the cornerstone of good quality of care in the United States. However, because of a lack of internal expertise, inadequate capacity for new technology, conflicting interests and recommendations, and a need for expertise in cases of potential malpractice suits, the physician peer review process may be suffering.[1]

A culture of "blame and shame" has permeated some peer review activities. Merry and Crago[2] state, "Physician leaders face an urgent imperative to detoxify peer case review." They argue that the core professional values that have permeated the medical profession since the time of Hippocrates have not prevailed in the current business climate. By the mid-1990s, there was a realization that hospitals could benefit if quality improvement principles were infused into the peer review process.[3] Around this time, Peer Review Organizations (PROs) mandated by Congress to oversee the care delivered to Medicare beneficiaries in each State began focusing on quality improvement. Reports from Europe of "quality circles" indicate that this perspective is becoming increasingly useful in improving quality among family physicians.[4]

In rural hospitals, the problems of traditional peer review are compounded for a number of reasons. First, the small medical staff in most rural facilities leads to partner reviewing partner and physicians reviewing either their direct competitors or those who cover their own practices during time off. These interpersonal dynamics result in a constrained review with inherent conflicts of interest.

If peer review results in an adverse action by a medical staff executive committee, physicians under review frequently seek legal redress, usually claiming restraint of trade, anti-trust violations, intentional torts, or discrimination.[5, 6] This discourages peer review and removes the opportunity for objective review, learning opportunities, and improvement of care. In small medical staffs, these constraints can obviate meaningful peer review.

The second problem is that often there are not sufficient numbers of physicians in the same specialty to review their peers. Unfortunately, in small hospitals, it is common for family physicians to be reviewed by pediatricians, internists, or even surgeons on their medical staff. This, they claim, is not review by real peers. Other specialists claim that review by someone outside of their own specialty (e.g., family practitioner reviewing a pediatrician) does not constitute fair and objective review by a peer.

A third problem perceived by rural physicians is that significant differences in resources between urban and rural hospitals can produce different diagnostic and therapeutic pathways. When physician reviewers practice under different circumstances, peer review determinations might be affected. For example, many diagnostic techniques and therapeutic options immediately available to urban physicians—such as subspecialty consultation, endoscopy, magnetic resonance imaging, or even basic ultrasound—may be unavailable or only irregularly available to rural practitioners. Thus, rural practitioners often have to render their initial clinical judgments based on less immediate information compared with urban physicians. This has the greatest impact on emergency department care in the rural environment, but it affects all specialties, particularly inpatient care.

Small rural hospitals attempting peer review may also miss the availability of expert opinion in cases involving potential malpractice suits. In addition, they may experience confusion in cases where peer review committee members arrive at conflicting recommendations.

Efforts to reduce these disparities may involve time-consuming and costly “workarounds,” such as transfer protocols that leave both patients and physicians dissatisfied. Such protocols are generally considered highly effective in trauma, but they are much less useful in conditions with an extensive differential diagnosis. One function of the rural peer review network has been to share insights into how these problems may best be addressed.

The Rural and Community Health Institute (RCHI) has developed a virtual peer review process for physicians in rural hospitals in Texas that has alleviated many of the problems described above. RCHI, a component of the Texas A & M Health Science Center, was established in 2003 with the mission of improving access to care and reducing disparities in health status and clinical outcomes between rural and urban communities in Texas. The Rural Physician Peer Review Model© has the following objectives:

- Promote incorporation of quality improvement methods into health care delivery in rural hospitals.
- Assist rural hospital staff members in meeting the increasing regulatory requirements of case review and quality of care.
- Disseminate evidence-based practice guidelines and updated information regarding clinical standards, criteria, and "best practices" for quality of care.

This article describes the innovative concepts employed in the Rural Physician Peer Review Model, the current participants and procedures utilized, preliminary assessment results, the barriers that challenge its operation, and the strategies being used to overcome these barriers, as well as plans for expansion of the system.

Innovations

The RCHI leaders have built a number of innovative concepts into the Rural Physician Peer Review Model, including a network of hospitals as its base, with a central staff, a quality improvement/patient safety philosophy, and the use of information technology. Each of these innovations is described in detail below.

Internal Peer Review: A Network

Texas statutes provide for confidentiality and nondiscoverability of peer review deliberations within a hospital's peer review processes. However, such protection is less certain if outside parties become privy to these data.[5, 6] Therefore, the decision was made to establish a network of hospitals affiliated with RCHI, and this relationship was incorporated into each of the hospital's by laws. This internal network shares responsibility in the peer review process and provides legal coverage.

Approach of Quality Improvement/Patient Safety

RCHI leaders searched for ways to implement the hallmarks of the perspective of patient safety and quality improvement. They assumed that quality and patient safety in health care could be improved by introducing organizational learning practices. Organizational learning refers to increasing a health care organization's capacity to take action based on the cycle of knowledge, understanding, reflection, and implementation. Thus, organizations "learn" by creating channels for information flow and networking.[7] Peer review presents a valuable learning opportunity for health care organizations to standardize their work practices, make knowledge more explicit, promote collegial learning, alleviate increased service and educational demands, and support physicians in adjusting clinical guidelines to the variance among patients.

Therefore, the learning organization concept is used as a tool to maintain an organization's learning environment, where education does not add on to the normal time demands of clinical practice. Rather, acquiring new knowledge becomes a natural means of enhancing patient care.[8] In light of the quality improvement concept, organizational learning requires an understanding of the processes that underlie patient care, teamwork, and deployment of new medical practices.[9, 10]

The organizational learning approach has proven effective in empowering change in primary health care practice, where resources may be scarce, and information sharing among colleagues may be difficult due to heavy workloads, conflicting priorities, remoteness of practice locations, and lack of effective feedback.[11, 12, 13]

From the beginning, RCHI leaders conjectured that it might be feasible to utilize patient safety and quality improvement literature during the case reviews. Currently, the RCHI physician who leads a review meeting searches the literature, with the assistance of a reference librarian from a medical college library, and reads pertinent articles prior to the meeting. He/she then reports on the findings of these articles during the discussion. These references are cited in the report written after the discussion. The physician-moderator also responds to requests for specific types of literature from participating physicians. A recent example was a request from a participating physician for evidence about the accuracy of the "rapid strep test." Participating physicians have been stimulated to share recent articles they thought were worthwhile, and all complete articles are placed in an electronic folder. Currently more than 100 evidence-based articles and guidelines are available to all hospital and physician network participants.

Graber, and colleagues[14] have described the occurrence of three types of medical errors: (1) no-fault errors, when it is medically difficult to make an accurate diagnosis; (2) system errors; and (3) cognitive errors, which are caused by a physician's cognitive deficits. The Rural Physician Peer Review Model seeks to address system errors and cognitive errors. Introducing ideas and data from the literature has proven beneficial in getting "best practices" used in clinical care. A basic premise of the process is that it is a professional's right and obligation to examine the care of patients and to ask specifically, "Can we provide better care next time for similar patients?" Thus, physicians can examine errors in light of the system instead of blaming individuals. After each peer review meeting, the RCHI staff members request that participating physicians evaluate the meeting. The results of these evaluations are described in the assessment section of this article.

Use of Information Technology

For practical reasons, it was imperative to provide an affordable, user-friendly, and HIPAA-compliant means of communication within the network, which stretches across the entire State of Texas. One possibility was to use paper and mail with a tracking system (e.g., Federal Express) to disseminate patient cases. However, an electronic system with encryption and password protection was preferable because electronic communication is faster and cheaper. Simple software that provided encrypted transfer of information with password protection was adopted for dissemination. This software required no financial commitments and was easy to install and use with minimal training. The only requirement for installation and use was Internet access and basic computer skills.

Initially, a separate file was created for each hospital (facility) in the network. In 2006, the system was upgraded to a Web-based system that incorporates physician folders, specialty folders, facility folders, and library folders (reference articles). Users were given individual passwords that determined which folders they could access.

In practice, both types of systems (mail and electronic) have been used. Many hospitals send paper patient cases to RCHI by mail with a tracking system; RCHI uses the electronic folders to

distribute the blinded patient cases to participants for the review meeting and also to distribute the reports of the review.

Since in-person meetings were impossible to hold because of the long distances among the hospitals, teleconferencing was selected as the method for holding the peer review meetings. The network participants access the committee meetings via a toll-free conferencing number with a conference ID number. The physicians identify themselves by name at the beginning of the meeting.

Teleconferencing has had the advantage of bringing a degree of anonymity and, therefore, greater objectivity to the patient case reviews than is possible in a face-to-face meeting. The practice of blinding the patient records before transmitting them to the physicians for review adds to the productive anonymity achieved. The teleconferences provide a forum for discussion of ideas without the inhibition of face-to-face meetings. The physicians involved in any meeting are all members of the same specialty. There may be several physicians from a hospital, but in most meetings, the physicians are located in different towns. Thus, they can pay closer attention to the use of practice standards and specialty protocols and far less attention to personal relationships. These regular teleconferences, as an aspect of an educational culture for quality improvement and patient safety, assist physicians practicing in rural areas in overcoming their isolation, an important factor for retention. It serves the same purpose as professional conferences but without the time away from practice and the expenses involved in attending a conference in person.

Category 1 Continuing Medical Education (CME) credit, meeting the requirements of the Texas Medical Board (TMB) for continuing licensure, is designated for physicians who prepare for and participate in the peer review teleconferences. Three CME credits are awarded for each meeting. If ethical issues are discussed, one of the three credits may be designated for ethics credit, another requirement of the TMB. The CME credits are administrated through the Texas A & M Health Science Center. The CME credit represents recognition that this peer review activity is a valuable and meaningful educational experience, in addition to serving as an incentive to participate.

Peer Review Within Specialty

A major advantage of the Rural Physician Peer Review Model is that rural physicians are able to hold peer reviews within their own specialty. The lack of a sufficient number of physicians of a like specialty in any one rural hospital is a serious obstacle to holding fair and impartial peer reviews. Family physicians in rural hospitals complain that review of their cases by obstetricians or pediatricians does not constitute review by peers. Conversely, surgeons feel that family physicians cannot adequately review surgery cases. Therefore, aggregating physicians of the same specialty across rural hospitals solves this problem.

Current Participants and Procedures

Currently, 30 of the 188 hospitals located in Texas counties with populations under 100,000 are enrolled in the peer review program. The 30 hospitals are located in 27 different counties (13 of which are considered to be “frontier counties”); 12 of the hospitals are designated as Critical

Access Hospitals (CAHs). The median daily census of participating hospitals is 11 patients (range, 2-54).

All hospitals willing to participate in the Rural Physician Peer Review Model sign a memorandum of understanding that details the purposes and uses of RCHI services and a business associate agreement that covers HIPAA regulation requirements. Multiyear contracts (2-5 years) are prepared and signed. A fee based on the average number of occupied beds in the hospital is charged to defray the expenses. A business plan, developed in 2003, is oriented toward cost recovery only.

Physicians from nine specialties currently participate, each in his/her own specialty meeting: family medicine (without obstetrics), family medicine (with obstetrics), general surgery, pediatrics, obstetrics and gynecology, emergency medicine, anesthesiology, internal medicine, and orthopedics. Requests from hospitals have been received for adding other specialties to the peer review system. The limited types of specialists in each of the rural hospitals constrain the specialties for peer review. Additional specialties can be added only when the number of physicians of a given specialty is sufficient to merit its addition among the participating hospitals in the peer review network. During the period that the Rural Physician Peer Review Model© has been in operation (February 2004 through April 2007), 934 patient cases have been reviewed in 209 teleconferences. The peer review teleconferences are held as needed, with family medicine meeting as often as eight times a month; emergency medicine and general surgery weekly; and orthopedics and most other specialties monthly.

Since the inception of the Rural Physician Peer Review Model, individuals who have served as quality directors in their respective hospitals have played an important logistic role. Quality management personnel maintain regular communication with RCHI staff members and physicians; they also identify charts for review, utilizing various screening criteria, in addition to handling all logistic arrangements within their hospitals, such as preparing and transmitting the cases for review. They are welcome to attend meetings, and many take advantage of this opportunity to enhance their understanding of patient safety and clinical standards of care.

Hospitals send patient cases for peer review by the fifth day of each month, to be scheduled for review in the following month. Records are frequently presented for review based on a local facility's established criteria or on a suggested list provided by RCHI. Suggested screening criteria are modified from time to time, depending upon findings identified during the peer review process. The current RCHI list includes:

- Unanticipated death.
- Discharge against medical advice.
- Delay in diagnosis/treatment.
- Validated patient complaints.
- Medical staff referral for any reason.
- Unplanned return to the emergency department.
- Unplanned return to surgery.
- Adequacy of documentation.
- Risk management concerns.

The RCHI staff members blind each patient record (i.e., redact all patient, caregiver, and facility identification) to eliminate bias and to ensure compliance with HIPAA and other RCHI policies. Dates and times relevant for care processes are left intact. Therefore, all records transmitted to physician reviewers provide anonymity during peer review. Two weeks before the teleconference, RCHI staff members post the blinded medical records along with a "face sheet" to the specialty-specific electronic folders. The face sheet contains a summary of the patient case, the reason for referral, pertinent clinical question, medical record comment, if any, and an index to the patient chart.

Once cases are posted, reviewing physicians in each hospital are able to access the cases via the Web to prepare for the teleconference. However, some physicians still prefer to have clerical staff members print out the cases. An RCHI physician-moderator reviews each case before the meeting. This review serves three purposes, to: (1) identify possible systemic failures, medical errors, close calls, issues with communication or equipment, and areas for improvement in the care of similar patients in the future; (2) research and select applicable clinical care guidelines and/or "best practices" for rural hospitals to be discussed by the committee in light of the specific patient chart reviewed; and (3) provide guidance during the peer review meeting in negotiating cumbersome and difficult patient charts.

A typical peer review teleconference begins when an RCHI staff member opens the conference phone line 5 minutes before the appointed time. Physicians from the various hospitals in the network dial in using a toll-free number and the conference ID access code. As each physician dials in, a tone is heard and the name of the physician is noted for the minutes and CME certification at the RCHI central headquarters. A short paragraph about CME credit is read at the beginning of the proceedings. Then the RCHI physician-moderator identifies the first case for review, presents a brief summary of the case, and identifies the reason the case was submitted for peer review. The physician-moderator then calls for open discussion.

Physicians typically conduct a lively discussion about the case and use this time to network with peers, sharing information gleaned from a variety of sources, including scientific and clinical literature, conferences, workshops, and personal communication with other physicians. Teleconferences provide a forum for communication, suggestions for patient care, and venting of frustrations for physicians who may be somewhat isolated in their rural communities. Patient safety issues, Joint Commission requirements, and other regulatory mandates are discussed as appropriate to the case.

After each record has been reviewed, the physician-moderator asks participants for a decision regarding the outcome of the peer review. The decision is made by consensus of the participating physicians. Choices for the peer review outcome refer to whether the care was appropriate, or whether a standard of care was breached. If there was a deviation from the standard of care, it must be classified as "major" (i.e., a substantial risk of potential patient harm) or "minor" (i.e., a recognizable departure from the standard of care, but unlikely to result in significant harm). After a consensus is reached, the physician-moderator moves to the next case.

At the end of the meeting, an RCHI staff member verifies the names of the physicians in attendance, ensuring that all who have participated will be awarded CME credits. If the participating physicians have any questions pertaining to the review or the peer review program,

they are given the opportunity to have them answered at this time. The moderator then closes the meeting and the phone line.

An RCHI nurse takes notes during the meeting and transmits these notes to the physician-moderator, who writes a report that is posted to both the hospital folder and the appropriate specialty folder within 1 week after the meeting. The participating physicians and quality directors are notified via e-mail when reports are posted. The physicians who "attended" the meeting have 1 week to review the reports and submit any revisions they feel are necessary. After 1 week, the reports are considered final reports and are deleted from the specialty folder, but they remain posted in the hospital folder.

During autumn 2006, an external audit of the policies, procedures, and integrity of the electronic firewalls of the Rural Physician Peer Review was conducted by a vendor familiar with HIPAA requirements, electronic security, and other applicable State and Federal mandates. The auditors found the policies and procedures to be sound and recommended only modest process improvements. The recommendations included using a copy machine not linked to the health science center computer network and setting up a separate local area network (LAN) for staff members who do the blinding of the patient cases.

Preliminary Results

Assessment of the Rural Physician Peer Review Model is ongoing. Preliminary results are presented here.

- Of the 934 patient cases that have been reviewed during the first 3 years of operation, from February 2004 through April 2007, the majority—575 cases (62 percent)—received judgments that the standard of care was acceptable.
- Minor deviations from the expected standard of care were noted in 172 cases (18 percent).
- Significant deviations, in which there was substantial risk of patient harm, were identified in 91 cases (10 percent).
- Inadequate documentation for adjudication was found in 18 cases (2 percent).
- No determination was reached due to insufficient information in 78 cases (8 percent).

A detailed review is underway of those cases in which the care was considered inappropriate. Other authors have devised various schema for classification of physician error in patient care[15, 16, 17, 18] with little agreement among them. We propose that a simplified taxonomy of physician error in patient care may result from our ongoing peer review activities as described here.

The educational approach of systems thinking and improving quality/patient safety through the peer review process is the most important innovation of the Rural Physician Peer Review Model. The awarding of CME credits is merited by the preparation and participation accompanied by use of the library of scientific articles. Table 1 presents the number of credits awarded.

RCHI staff members requested that physicians answer several questions on a 5-point Likert scale using commercially available software. These questions included the following:

Q1: Are you satisfied with the inclusion of quality improvement and patient safety principles in the peer review meeting?

Q2: Was this peer review meeting accomplished in a manner that was impartial and fair?

Q3: To what degree are you satisfied with the systems thinking approach addressed in this peer review?

Table 1. Number of continuing medical education credits awarded by year

Year	Meetings (N)	Physicians (N)	CME credits awarded	Ethics credits awarded[a]
2005	56	53	244	42
2006	83	340	1002	31
2007 (January – June)	70	265	795	48

a Texas defines and requires ethics credits each year.

The physicians (N = 105) have responded very positively to all three questions, indicating satisfaction with the key elements of this innovative process. Figure 1 shows these results graphically. The mean scores are in the upper range of the 5-point Likert scale (5 = high; 1 = low).

The Rural Peer Review Model emphasizes adherence to CMS core measures (quality of care indicators mandated by Medicare) and Joint Commission mandates, such as the requirement that all physician orders rendered verbally or by phone be documented by nursing staff and confirmed by means of "read back" to the physician. As a value-added service, RCHI personnel have catalogued this measure in all charts for participating hospitals. Review of the data indicated that during 2.5 years, about one-third (36 percent) of the verbal and telephone orders have been read back. Because hospitals can enter the network in any month, new hospitals may need to learn what more experienced hospitals have already learned and implemented. This variable needs to be taken into account when analyzing the data. Improvement in read-back has clearly occurred, but there is opportunity for future improvement.

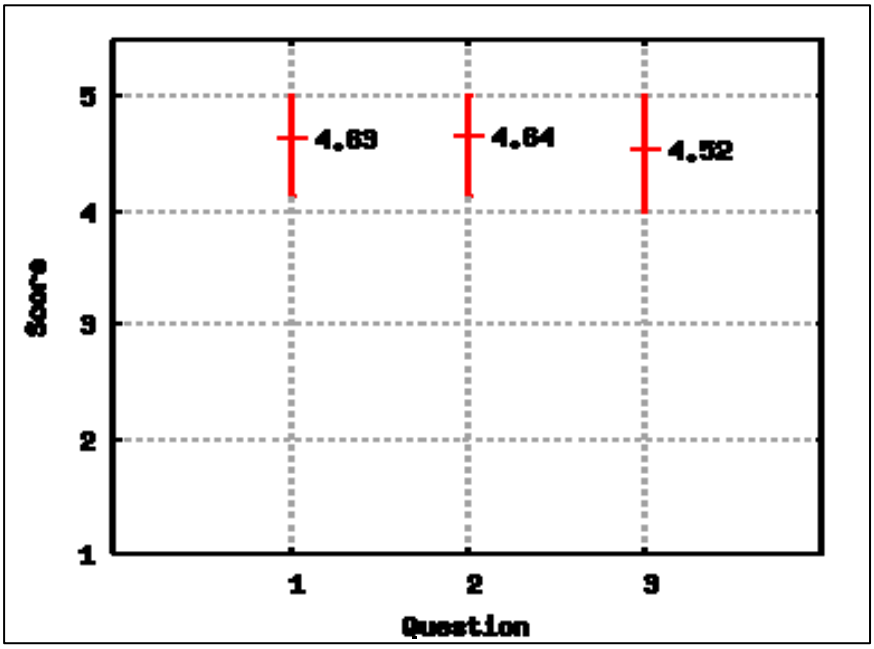

Figure 1. Means (±SD) for the physician scores for each question.

A survey to obtain feedback from the quality directors was conducted using electronic software during July and August 2007. The survey containing 10 questions

was sent to 40 individuals in 28 participating hospitals. Completed surveys were returned from 16 hospitals, a response rate of 57 percent. The questions included such items as criteria used to send patient cases for review, disposition of the final reports for the hospitals, problems faced by the hospital in participating in RCHI peer review, and hospital gains from the RCHI peer review. In response to hospital gains, the most frequent answers were the objectivity gained by having a group of peers outside their hospital conduct the reviews and the education offered by these meetings.

The physician-moderator and staff members are planning a pre- and post-intervention study of medication reconciliation with the hospitals enrolled in peer review. Using a subset of patient records, they plan to analyze the degree of medication reconciliation utilized, implement a paper process for medication reconciliation in a selected number of hospitals, and analyze the results 1 year later.

Barriers and Strategies

As with any process, barriers to successful implementation of the Rural Physician Peer Review Model are apparent. RCHI staff members have worked persistently to develop strategies to mitigate these barriers, knowing that some challenges will be perennial. Obtaining physician participation is the most important and persistent challenge.

One of the main barriers to physician participation has been overcoming the historic stigma of peer review as traditionally practiced with a “blame and shame” approach. We have found that once a physician attends one or two teleconferences, initial reticence is replaced by an appreciation of the opportunity to network with peers in a meeting that is focused on education and patient safety rather than criticism and finger pointing. The anonymity of the teleconference and the blinded records remove much of the reluctance that physicians often feel in offering criticism face-to-face.

The many competing priorities for physicians’ time represent another persistent challenge. These priorities include patient care, hospital committees, clinic and office management, community and civic leadership duties, and family responsibilities. In rural areas, physicians play important leadership roles in the communities they serve. They cannot partition off and maintain only their patient care duties. Therefore, making time to participate in peer review meetings is difficult.

Quality directors, like most employees of rural hospitals, “wear many hats.” Among the roles they perform in making sure physicians “attend” peer review meetings are selecting charts for review, placing the dates and times of meetings on the physicians’ calendars, providing reminders, printing out a “hard copy” for those physicians who prefer to review away from a computer, protecting the meeting time from interruptions, tracking reports, distributing CME certificates, and conducting the scientific literature search. RCHI staff members send an e-mail message with the cases to be reviewed to the hospital quality director and relevant specialty physicians 2 weeks before the scheduled meeting. Each hospital is called on a monthly basis to determine any special needs the facility may have pertaining to peer review. A monthly calendar is sent to each quality director with all peer review information listed, along with a calendar showing meeting dates that is sent to physicians.

Some difficulties arise from the small number of physicians in each community. Taking time off for vacations, holidays, and urgent family matters depletes the ranks of participants. When even one physician is away, it may not be possible for hospital staff to participate in peer review.

Occasionally, there are technologic challenges for the rural facilities when participating in our peer review program. Many rural hospitals operate on a very limited budget and have little money for frequent technologic upgrades. When presented with large records to print, older computers and printers can create time challenges for the quality directors, since the more voluminous records require extended amounts of time to print.

Another barrier for the Rural Physician Peer Review process is the limited number of some specialists in the rural facilities. For example, RCHI includes in its contracts the specialties of orthopedics and obstetrics/gynecology. Only one board certified orthopedist participates in the reviews, creating difficulty when this orthopedist is away. In this instance, RCHI must contract with an outside orthopedist to critique the charts and participate in the teleconference. This creates an additional expense for the peer review program, since an outside provider must be reimbursed. For a nonprofit entity with a budget already operating on a very thin line, this added expense may be difficult to absorb.

Conclusion

The Rural Physician Peer Review Model is significant because it provides a virtual process to achieve unbiased physician judgments about patient care, and it promotes systems thinking and quality and patient safety improvements for a significant number of rural physicians. This model has overcome some of the traditional problems of peer review, primarily replacing the “blame and shame” culture with a focus on education and system improvement. Challenges of obtaining physician time for participation and limited resources, especially human and technology resources, will continue to demand creative solutions. Nevertheless, the Rural Physician Peer Review Model has the potential to be a genuine advance in enhancing quality of care and patient safety for rural hospitals. Success thus far has stimulated plans to expand the number of hospitals in the Rural Physician Peer Review network.

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