Practical Suggestions on How to Move From Peer Review to Peer Learning

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OBJECTIVE. The purpose of this article is to outline practical steps that a department can take to transition to a peer learning model.

CONCLUSION. The 2015 Institute of Medicine report on improving diagnosis emphasized that organizations and industries that embrace error as an opportunity to learn tend to outperform those that do not. To meet this charge, radiology must transition from a peer review to a peer learning approach.

It has been previously proposed [1] that the radiology community transition from a peer review model of performance evaluation to a peer learning model of continuous feedback, learning, and improvement. The rationale for transitioning peer review from an evaluative model to a continuous learning model was based in part on the Institute of Medicine's recognition that by embracing error as an opportunity to learn, organizations and industries that have a progressive attitude toward failure tend to outperform those that do not [2]. Owing to a growing recognition of concepts emphasized by the Institute of Medicine and others [1–3], an increasing number of radiology practices are beginning to make the transition, including our institutions. Although they have evolved separately and differ in certain features, the programs at our hospitals share some basic themes.

This review outlines common themes in our peer learning programs that constitute practical steps that radiology practices can take to make the transition from a model of peer review to one of peer learning. These steps include sequestering learning and improvement activities from monitoring for deficient performance; establishing a method of case identification; moving from random sampling of cases to active inclusion of identified learning opportunities; replacing numeric scoring of errors with qualitative descriptions of learning opportunities; organizing the peer learning program; providing confidential, constructive feedback to individuals; conducting effective learning conferences; linking the peer learning program to process improvement; and taking practical steps for meeting requirements for Ongoing Professional Practice Evaluation (OPPE) and Focused Professional Practice Evaluation (FPPE). A final section addresses our collective experience thus far with the transition to peer learning in the various programs at our institutions.

Sequestering Learning and Improvement Activities From Monitoring for Deficient Performance

One of the challenges regarding the debates about peer review in medicine stems from the lack of agreement on the meaning of the term "peer review." Traditionally, peer review has referred to the study of a provider's clinical work to evaluate for outlying poor performers. Such a definition emphasizes the evaluative function whereby professionals function as judges of their peers' performance [1–3]. At times, however, the term has also been used to encompass activities related to identifying, discussing, and studying one's own and others' errors in a collaborative attempt to learn and improve. This definition emphasizes the supportive learning function whereby professionals function as one another's coaches and sounding boards. In some cases, peer review may be framed as a philosophical approach, whereas in other cases, peer review processes may be precisely defined by institutional bylaws or state regulations. Oversight organizations such as The Joint Commission and the quality programs of the American College of Radiology also play a role in defining these processes.

Although both of the roles (judge and coach) attributed to the term "peer review" are important, they constitute distinct objectives. When combined, the learning objectives tend to be sacrificed to those of the evaluative objectives. Learning depends critically on mutual trust and support between colleagues, which can be undermined by the evaluative function [1]. To maintain the integrity of the learning function, it is critical that these two functions be sequestered from each other, in both terminology and operational structure. Mechanisms to evaluate for the potential of outlier poor provider performance are important but should be a separate process from the evaluation of errors for potential learning purposes.

After the decision is made to transition from peer review to peer learning, the first step in actualizing that decision is for practice leaders to explicitly identify and discuss the transition with relevant stakeholders, including members of the radiology practice, hospital leaders, and relevant administrators. We have found that stakeholder skepticism often turns to support when the rationale, the plan, and the practice leaders' commitment to legitimate improvement are illustrated in depth. This will become progressively easier as critical mass and supportive literature develop for peer learning.

Method of Case Identification: Moving From Random Sampling of Cases to Active Inclusion of Identified Learning Opportunities

There has been a great deal of emphasis in the literature on how cases are selected for peer review systems [4, 5]. Random selection of peer review cases is often emphasized so that error rates for individual radiologists can be calculated. We have found that most cases in which serious errors have occurred, especially those with learning potential, are rarely identified by random audit. Such cases are more typically discovered through other mechanisms: consultation with referring physicians, review of previous comparison studies, pathologic-surgical discrepancy reports, discussion at clinical conferences, complaints to radiology leadership, and incident reporting systems. The increased yield for identifying learning and improvement opportunities from such actively identified cases as opposed to those identified by randomly audit has been documented [6, 7].

For a peer learning system to be optimal, the emphasis must be on the active identifi-

cation of cases with learning opportunities. The four of us debate whether inclusion of randomly selected peer review cases has a worthwhile cost-to-benefit ratio. The time commitment to randomly auditing cases is much greater than actively pushing identified learning opportunities, and the yield of identifying meaningful cases is lower. Some of our institutions have already abandoned or are considering abandoning random auditing of imaging cases. Others believe that specific types of deficiencies, such as inappropriate follow-up recommendations and incorrect reporting structure, can be identified by means of random audit, and this provides a mechanism to better identify these types of learning opportunities.

One situation in which sampling of cases may be useful is a focused improvement campaign. One example is reviews such as a Practice Quality Improvement project to meet part 4 of Maintenance of Certification for the American Board of Radiology. In an improvement campaign, performance in a focused area of practice for a group of individuals is audited and assessed on the basis of an objective classification system. Areas of weakness are assessed, and a dedicated effort is launched to drive improvement. Such projects are time limited, and there is an explicitly recognized focus on improvement.

Replacing Numeric Scoring of Errors With Qualitative Descriptions of Learning Opportunities

A numeric classification system for scoring discrepancies is often considered to be the core element of traditional peer review. Most publications on RadPeer and related peer review systems have focused heavily on the use of that system, on processes and governance for how original interpreting radiologists can appeal a reviewer score, and on ways to revise and improve the scoring [1–16]. Many have found peer scoring to be a nonproductive aspect of traditional peer review because it tends to foster defensiveness, be extremely subjective and unreliable while giving a false impression of accuracy, and distract from the true objectives of individual and organizational improvement [1–3, 17–22].

In addition, in our collective experience using numeric scoring systems, conversation at both peer review conferences and peer review committee meetings was often dominated by discussion and argument about the number of the score assigned to the error. This conversation often overshadowed

any discussion related to the actual nature of the error or how to prevent it from recurring. Such discussions do not lead to learning or improvement. To our knowledge, there is no evidence that the use of a numeric scoring system contributes in any positive way to learning or improvement. There is evidence, however, that numeric scoring systems are flawed, highly subjective and inaccurate, and prone to sampling bias and underreporting [1–3, 17–22]. The numeric output generated by such peer review gives a false impression of accuracy [3]. The British Radiology Society has come to the conclusion that numeric scoring in peer review appears to be of no value, and it has abandoned the practice [23]. Whereas some may argue that a downside of not numerically scoring errors is the inability to calculate and compare error rates between faculty, the inaccuracy, lack of reproducibility, and underreporting of such calculations undermines the wisdom of using such information to evaluate faculty.

In transitioning from peer review to peer learning, we advocate completely abandoning an ordinal scoring system to classify the severity of the discrepancy. Instead, classification systems should be designed in a way that facilitates learning. For example, it may be helpful to classify contributed cases as "great call" or "learning opportunity." A great call is defined as a case in which a radiologist has made the correct finding and interpretation but there is a reasonable chance that another radiologist would likely have not done so [1]. Learning opportunities are cases in which there has been a perceived error, deviation from best practice care, or a system-related problem. Some of the four of us subdivide items identified as learning opportunities into categories such as issues of perception, interpretation, technical factors, reporting, communication, radiologist recommendations, and other process-related factors. This approach to categorization can facilitate future review of entered cases for trends, help in the selection of material for learning conferences around a central theme, and facilitate review of issues not directly related to image interpretation. If random auditing is part of the peer learning process, a category of "agree" is also needed.

Organizing the Peer Learning Program

Peer learning programs require time and attention. To accomplish this, we recommend designating a peer learning leader, who may be supported by a peer learning or quality

improvement committee. The peer learning leader manages the case submission process, oversees the process of providing feedback to individual radiologists, oversees the process by which peer learning conferences are prepared, and facilitates submissions to process improvement. The peer learning leader should be supported by an information system that allows case submissions to be translated into learning in an efficient and effective manner, preserving confidentiality in all cases. A number of proprietary programs from companies such as PeerVue, Primordial, and Medicalis can be used to manage peer review [11]. Although many of these programs are set up to use a point-based scoring system, we have found that the companies are willing to help departments modify the process to fit within a nonscoring approach. The system has to be able to keep track of entered cases, provide feedback to the original interpreting radiologist, and maintain confidentiality of the process for both the reviewing and original interpreting radiologists.

Appropriate governance of the peer learning program depends in part on the size and degree of subspecialization of the radiology services at a particular institution. In a smaller general imaging department, the program may best be managed by a single individual or a single committee. Larger, more subspecialized practices may choose a model based on multiple peer learning programs by subspecialty division within a department that are overseen and coordinated by a practice-level committee.

The primary role of the peer learning committee is to help review submitted cases for opportunities for organizational improvements, such as improvements in processes, policies, programs, and systems. The committee can help the peer learning leader monitor submitted cases for emerging themes of practice deficits or confusion, which may result in focused education and training, including review of dedicated themes in peer learning conferences.

Providing Confidential, Constructive Feedback to Individuals

Feedback is a critical aspect of individual learning [1]. Individuals cannot learn from their mistakes if they are not aware of them. Providing direct feedback to the individual who originally was involved in the identified case is critical. It must be handled in a delicate and professional manner. A number of electronic peer review systems imme-

diately send electronic feedback to the original interpreting radiologist at the moment the feedback is entered. For those without such electronic systems, feedback about an error may be best provided in person by the radiologist who first learned of the error or by the peer learning leader.

Conducting Effective Peer Learning Conferences

Perhaps the most important element of the peer learning program is the peer learning conference, in which cases are shared with the group and opportunities for improvement are discussed. A number of previous articles have emphasized the importance of an educational session for sharing the learning from study of errors [3, 6, 10–12, 16].

Depending on the size and degree of subspecialization of the radiology services at a particular institution, peer learning conferences may have to be handled differently. In a smaller general imaging department, a single general peer learning conference may be sufficient. In more subspecialized departments, separate conferences for each subspecialty or a rotating conference focused on the different subspecialty areas may be an option. Encouraging radiologists to attend peer learning conferences even in other subspecialty areas can be educational, because the roots of many of the errors are often similar regardless of the different areas of content expertise. The optimal frequency of peer learning conferences is likely variable and related to the size and nature of the radiology department. We have come to have our conferences monthly or every other month.

Either a committee or a designated convener can be appointed for each subspecialty domain. That committee or convener culls the submitted cases in a common cause analysis to identify recurrent errors, errors of high clinical importance, and potentially repeatable errors. The most educational cases or series of cases identified are shown at the conference. Cases should be shown in a deidentified manner. Showing cases with a presentation tool (e.g., Microsoft PowerPoint or Apple Keynote) rather than in the PACS system can help with ensuring confidentiality.

The primary intended audience for the conference is practicing radiologists. However, trainees and other guests may be considered for participation. Certainly, in academic and teaching programs, trainees should be fully integrated into the peer learning process both for the educational opportunities such

meetings offer and because trainees will need to participate in such processes when they enter practice. Exposing trainees to the culture of peer learning early in their careers is likely advantageous. Conferences may be videorecorded so that faculty not able to attend in person may review at a later date.

Linking the Peer Learning Program to Process Improvement

In the process of evaluating learning opportunities, associated issues may be related to process or system issues rather than individual performance. This can be identified at the time the case is entered into the peer learning system, when the case is reviewed, or during the discussion at the peer learning conference. It is important that such identified system issues be addressed. A defined interface is needed between the peer learning system and the system for quality improvement. When system issues are identified through the peer learning process, the issues should be assigned an owner and followed through until solutions are successfully implemented. A defined problem accountability process can be helpful for increasing the likelihood of solutions being followed through to fruition [24, 25].

Practical Steps for Meeting Requirements for Ongoing Professional Practice Evaluation and Focused Professional Practice Evaluation

It is important to operationally separate activities related to learning and improvement from those designed to monitor for deficient performance. This includes separating the peer learning program from OPPE and FPPE.

For organizations accredited by The Joint Commission, OPPE is a mandated process by which the organization must collect and analyze practitioner-specific data on all credentialed and privileged care providers [26–28]. The practitioner-specific data must be collected for parameters covering six categories: patient care, medical and clinical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.

In addition to other sources, metrics can be culled from the peer learning process for the purposes of meeting some of the categories of OPPE and the portion of FPPE used for new faculty. We suggest that metrics related to the peer learning process used for OPPE focus on participation. Potential par-

ticipation metrics include participating in a defined percentage of peer learning conferences. Participation can also be defined by faculty agreeing to have the cases that they have participated in as interpreting radiologists reviewed as part of the peer learning process. For those who use random assignment of cases for potential peer learning, a goal for percentage of assigned cases completed can also be used. A significant step toward improving peer learning is ensuring that practitioner-specific error rates are not used for the purposes of OPPE. Clear separation of the learning opportunities identified for peer learning from any potential use for OPPE or, even more so, FPPE is essential.

The Joint Commission also requires accredited institutions to have a process for FPPE. FPPE has two components. The first is for care providers new to the organization and can be similar in structure to OPPE. The second portion of the process of FPPE is to be implemented when suspicion is raised about outlying poor performance of a particular care provider [29]. Such concerns can arise as the result of patient or family complaints, concerns of referring physicians or colleges, an excessive number of bad outcomes (or misses in diagnostic radiology), and other sources. Such processes serve an important function in protecting patients from care providers with serious performance issues, including those related to substance abuse, mental or physical illness, and deterioration of knowledge over time. Defining processes to be used for initiation of FPPE in an instance of raised suspicion of outlying poor performance of a particular care provider have been previously described [29] and are beyond the scope of this article. It is particularly important that such FPPE processes be, and are perceived to be, completely separate and sequestered from the processes used for peer learning.

Experience Thus Far With Converting to Peer Learning

This article is a collaborative effort between coauthors at four different and unrelated radiology practices. The approach to converting from peer review to peer learning was different in each of the organizations. This article describes elements common to the programs. The collaborative and conceptual nature of the article prohibits inclusion of numeric data to support the argument. Data regarding such conversions will likely be published in the future from experience with specific programs. There are, however,

common experiences that can be anecdotally summarized herein.

Anecdotal experience and departmental faculty surveys have shown that radiology practitioners, not surprisingly, view the peer learning approach positively in comparison with the peer review system. Peer learning is perceived as nonpunitive and focused on improvement. Peer learning conferences are often both well attended and popular. However, the process of conversion from peer review to peer learning takes time. The cultural acceptance by faculty that the process is focused on improvement and is nonpunitive is not immediate. This can be seen by the number of cases per month that are actively pushed into the system. Each program has seen this number increase over time, showing increased willingness of faculty to share learning opportunities and errors as they become more comfortable with the process. The speed of conversion has also been heterogeneous. In departments large enough to have separate processes according to radiology subspecialty, experience has shown that some divisions are quick adapters and others slow, even within the same department.

In all of our experiences, the value of actively identified learning opportunities is perceived to far outweigh the value of random auditing of cases. A number of our institutions have abandoned the process of randomly auditing cases as part of peer learning.

Finally, the four of us agree that a key requirement for success is radiologists' time and commitment to the process. First, individual radiologists must take the time to actively enter cases when they encounter learning opportunities. Second, for those who serve as peer learning leaders, on a peer learning committee, or as conference conveners, the process of reviewing the entered data and preparing the peer learning conference takes time. The necessary time must be given to those assigned to these tasks for the peer learning process to be successful.

Conclusion

The argument that the radiology community needs to migrate from a peer review to a peer learning approach has previously been presented [1]. Such a conversion advances radiology, positioning us as a specialty that embraces errors as an opportunity to learn and continuously improve. Essential resources needed for movement toward a process of peer learning include peer review software, faculty time, and leadership support.

Because most of the learning opportunities discovered in any radiology department are likely similar to those encountered at other institutions, there is also great potential for national sharing of learning. One could envision a national forum whereby sharing of such learning opportunities and common cause analysis to identify the most common issues could accelerate national improvement in our specialty. A national case repository could be accessed by small practices to enrich their peer learning experience. Analysis of cases could be used to inform decisions about educational materials and testing for our trainees and for continuing medical education purposes.

Errors are an inherent part of the practice of medicine, including radiology. The challenge, and the great opportunity, is to simultaneously accept this reality and leverage it for improvement.

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