

Transition From Peer Review to Peer Learning: Experience in a Radiology Department

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Abstract

Purpose: To describe the process by which a radiology department moved from peer review to peer collaborative improvement (PCI) and review data from the first 16 months of the PCI process.

Materials and Methods: Data from the first 16 months after PCI were reviewed: number of case reviews performed, number of learning opportunities identified, percentage yield of learning opportunities identified, type of learning opportunities identified, and comparison of the previous parameters between case randomly reviewed versus actively pushed (issues actively identified and entered). Changes in actively pushed cases were also assessed as volume per month over the 16 months (run chart). Faculty members were surveyed about their perception of the conversion to PCI.

Results: In all, 12,197 cases were peer reviewed, yielding 1,140 learning opportunities (9.34%). The most common types of learning opportunities for all reviewed cases included perception (5.1%) and reporting (1.9%). The yield of learning opportunities from actively pushed cases was 96.3% compared with 3.88% for randomly reviewed cases. The number of actively pushed cases per month increased over the course of the period and established two new confidence intervals. The faculty survey revealed that the faculty perceived the new PCI process as positive, nonpunitive, and focused on improvement.

Conclusions: The study demonstrates that a switch to PCI is perceived as nonpunitive and associated with increased radiologist submission of learning opportunities. Active entering of identified learning opportunities had a greater yield and perceived value, compared with random review of cases.

Key Words: Peer review, peer learning, ongoing professional practice evaluation, random peer review

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INTRODUCTION

The Institute of Medicine (IOM) issued a report in 2015 titled “Improving Diagnosis in Health Care” [1]. This report focused on the underappreciated problem of diagnostic errors in health care and outlined the need to create an environment that embraces errors as an opportunity to learn [1]. A previous article, published in *Radiology* in 2017, outlined the need to review what had become the common approach to peer review in radiology—a *quality assurance* type of

approach where score-based peer review was performed with the goal of identifying poorly performing radiology care providers [2]—and how such a system did not meet the charge of the IOM. That article outlined the arguments as to why the radiology community needed to migrate from an approach of peer review to one of peer feedback, learning, and improvement or peer learning [2].

In this article, a department of radiology that made the transition from peer review to peer learning reviews data from this experience over the first 16 months’ posttransition. The peer learning process is referred to as *peer collaborative improvement* (PCI). The purpose of this article is to describe the process by which a radiology department moved from peer review to a process of PCI and review data from the first 16 months of the PCI process.

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METHODS

The department of radiology at which the study was performed provides imaging services for a pediatric health care system that includes three children's hospital locations, a hospital for women, multiple subspecialty pediatric practices, a large pediatric primary care network, and a health insurance product.

Informatics Infrastructure

The radiology informatics infrastructure in the department includes Intellispace (Philips, Cleveland, Ohio) for the PACS, Radiant (EPIC, Madison, Wisconsin) for the radiology information system, Powerscribe 360 (Nuance, Burlington, Massachusetts) for the dictation and reporting system, and Prism (Primordial, San Mateo, California) for the work list solution. The department uses the Primordial peer review module as the informatics backbone to run the PCI process.

Historic Peer Review Approach

For several years before the switch to PCI, the department peer review process included random auditing of two cases per radiologist per clinical work rotation. The radiologist was assigned random cases to review based upon his or her clinical radiology work profile. Cases that were randomly audited were less than 24 hours old so that when discrepancies were identified, care providers could be notified and direct patient care potentially improved. Case assignments were anonymous.

Cases were reviewed based on the 4-point scale originally created by RADPEERTM [3-6]. The grading system included:

1. Agree
2. Difficult diagnosis, not ordinarily expected to be made
3. Missed diagnosis that should be made most of the time
4. Missed diagnosis that should be made almost every time—misinterpretation of findings

Scores of 3 or 4 were considered discrepancies or errors. For scores of 3 or 4, the original reading radiologist was notified of the discrepancy electronically with anonymous feedback. The chair of the peer review committee and radiologist-in-chief were also notified.

Error rates were calculated for each faculty member by dividing the number of cases scored a 3 or 4 by the total number of cases audited for that particular radiology care provider. The radiology care provider error rate was one of the individual faculty performance parameters used for the purposes of ongoing professional practice evaluation (OPPE) as relates to medical staff privileging.

Process for PCI

The department switched to PCI on January 17, 2016. The goal of PCI is to improve our clinical service through studying our identified learning opportunities, not to identify poor-performing radiology clinical care providers. The major changes for the deployment of PCI included four components: (1) method of case identification: emphasis of active pushing of identified errors, (2) abandonment of numerical scoring of errors for qualitative descriptors, (3) PCI learning conferences, and (4) sequestering learning and improvement activities from monitoring performance: using participation in process for OPPE.

Method of Case Identification: Emphasis of Active Pushing of Identified Errors.

In the previous peer review system, case identification was purely reliant on random review of radiology cases. Although the process of random review was continued, an emphasis was made on actively pushing identified learning opportunities into the system. Radiologists commonly encounter potential learning opportunities when interacting with cases previously interpreted by other radiologists. These discoveries may occur when the identifying radiologist is reviewing a comparison study, reviewing cases with consulting physicians, at interdisciplinary conferences, or from data resources such as pathologic or surgical imaging discrepancy reports. It is the hypothesis of the investigators that discovery of errors with learning opportunities are much more likely if cases are actively pushed versus randomly reviewed.

In the investigators' electronic systems, each imaging study has an electronic button displayed that can be clicked to enter that case into the PCI system.

Abandoning of Numerical Scoring of Errors for Quantitative Descriptors.

For reviewed cases, the authors have abandoned the numerical scoring of cases in favor of a qualitative description of the nature of the potential learning opportunity. Cases can be graded as "agree," "great catch," or "learning opportunity." Categories of potential learning opportunity are shown in the palate in Figure 1. The previously utilized 4-point system based on the RADPEER scoring system [2-6] is no longer used.

PCI Learning Conferences. A monthly PCI learning conference rotates by imaging subspecialty in a defined fashion and includes body, neurological, musculoskeletal, and other (cardiac, nuclear medicine, interventional radiology). Each session has an individual who serves as

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