



Computerized Integration of Mandatory Professional QA Review into the Interpretation Process

Kevin W. McEnery, MD, Joseph R. Steele, MD, Martha E. Riley, RTR

Division of Diagnostic Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX

PROJECT AIM

To integrate radiologist professional peer review into radiologist workflow and achieve a 5% rate of mandatory peer review utilizing RADPEER™ classification.

PURPOSE

Professional peer review is accepted as an important aspect of radiologist professional quality assurance (QA). We describe a system for integration of a mandatory peer review QA process into the interpretation workflow. This system incorporates implementation of the RADPEER™ scoring scale within an interpretation workstation for mandatory professional QA data collection and analysis.

METHODS

A mandatory QA process was implemented to supplement a into a radiologist workstation (RadStation, MDACC). During interpretation, when the system notes a comparison examination available for the selected study, it then designates 5% of studies for mandatory peer review. The radiologist's QA event assesses the accuracy of the prior examination based upon the information available on subsequent imaging. The assessment event can occur at any time during the interpretation process. However, the system does not allow finalization of a dictation unless the QA event is entered (Figures 3-8).

The recording of the discordance is based upon the ACR RADPEER™ scale (2A/B, 3A/B, 4A/B) as well as a text entry comments section. "Agree" QA event is recorded as RADPEER "1". All QA events are recorded in a secure database, separate from the electronic medical record, and available for review and analysis by the QA committee. Radiologists can submit voluntary peer review events on any reviewed study.

RESULTS

- Study period: 1/1/2011-10/31/2011 (Fig. 1)
- 48,789 peer review events were recorded
 - 66.2% voluntary and 33.8% mandatory
- 15,289 (98.2%) of events were in agreement
- 901 (1.8%) of studies were referred for analysis by QA committees – all scores 2A/B, 3A/B, 4A/B
- Mandatory peer review maintains at designated 5% rate (Fig. 2)

Score	Voluntary Peer Review	Mandatory Peer Review	Total Peer Review	MDACC	RADPEER
1	31,630 97.87%	16,258 98.72%	47,888 98.15%	98.15%	97.11%
2A	231 0.71%	99 0.60%	330 0.68%	0.99%	2.51%
2B	115 0.36%	37 0.22%	152 0.31%		
3A	144 0.45%	47 0.29%	191 0.39%	0.70%	0.32%
3B	128 0.40%	21 0.13%	149 0.31%		
4A	39 0.12%	6 0.04%	45 0.09%	0.16%	0.07%
4B	33 0.10%	1 0.01%	34 0.07%		
Total	32,320 100.00%	16,469 100.00%	48,789 100.00%	100.00%	100.00%

Figure 1. Peer Review Tally for Mandatory and Voluntary Peer Review Events – Submission scores represent opinion of submission radiologist prior to QA Committee review of submitted discordance.

Peer Review Process

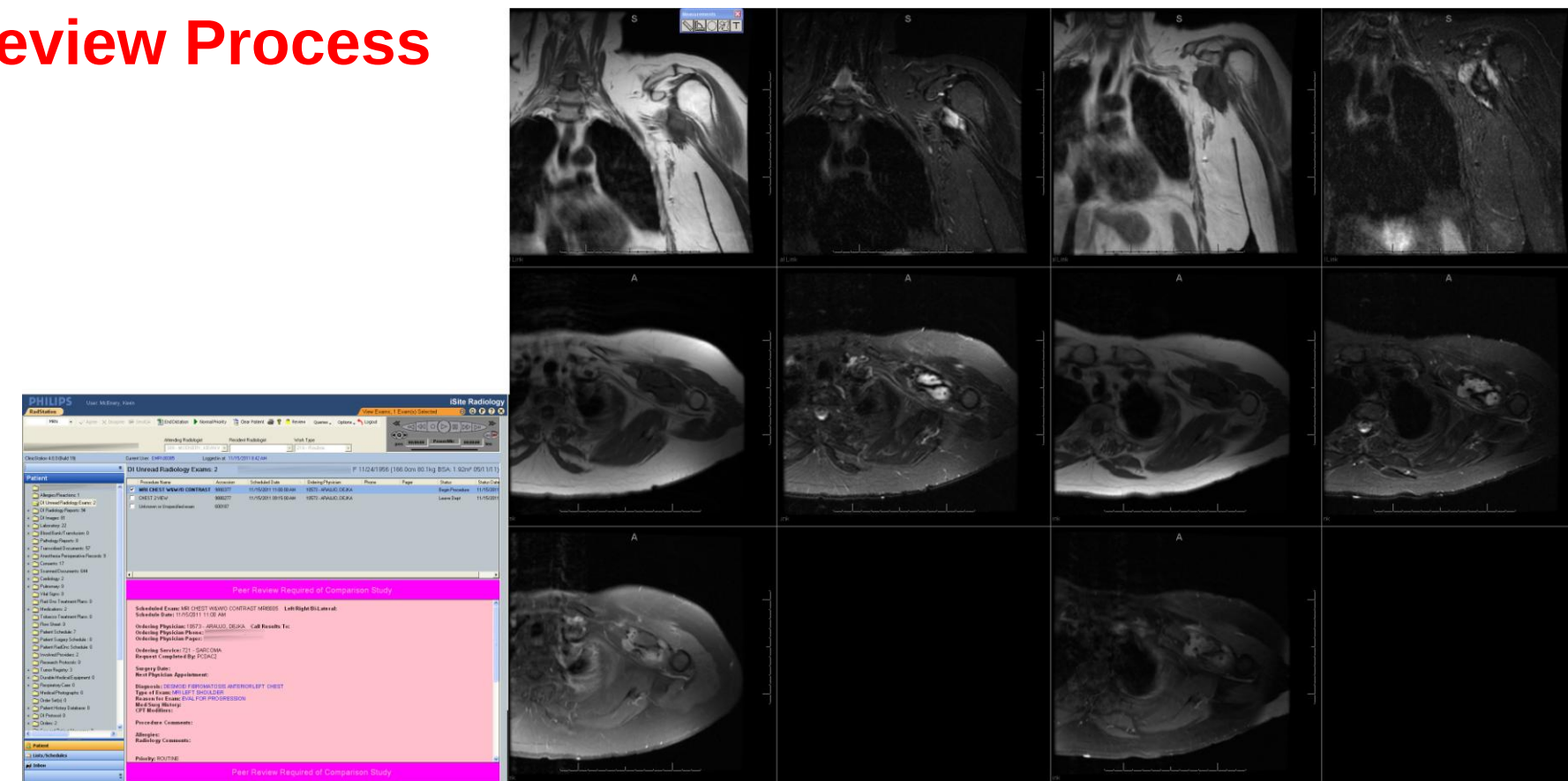


Figure 3. Designation for Mandatory Peer Review informed by non-interruptive color change of eRequisition

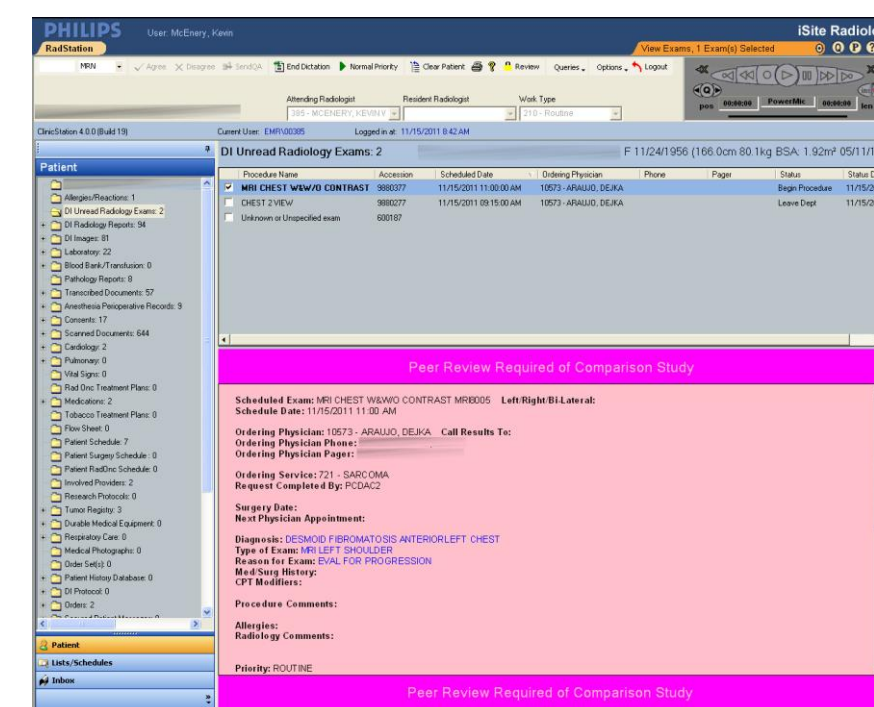


Figure 4. Screen alerts radiologist that peer review of comparison study required during interpretation.

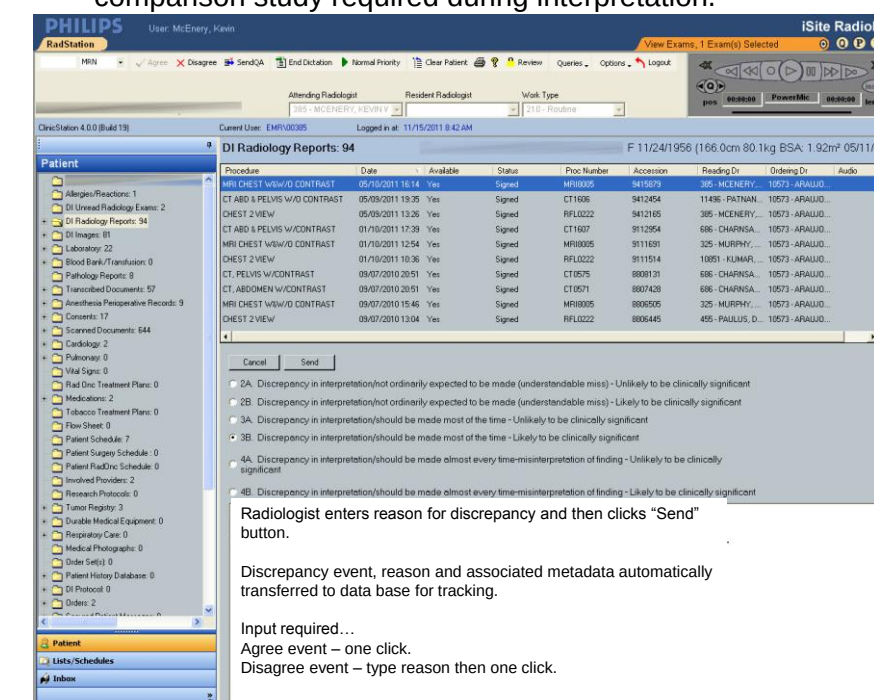


Figure 6. If "Disagree" opinion indicated, entry form appears with radiologist noting reason and severity score.

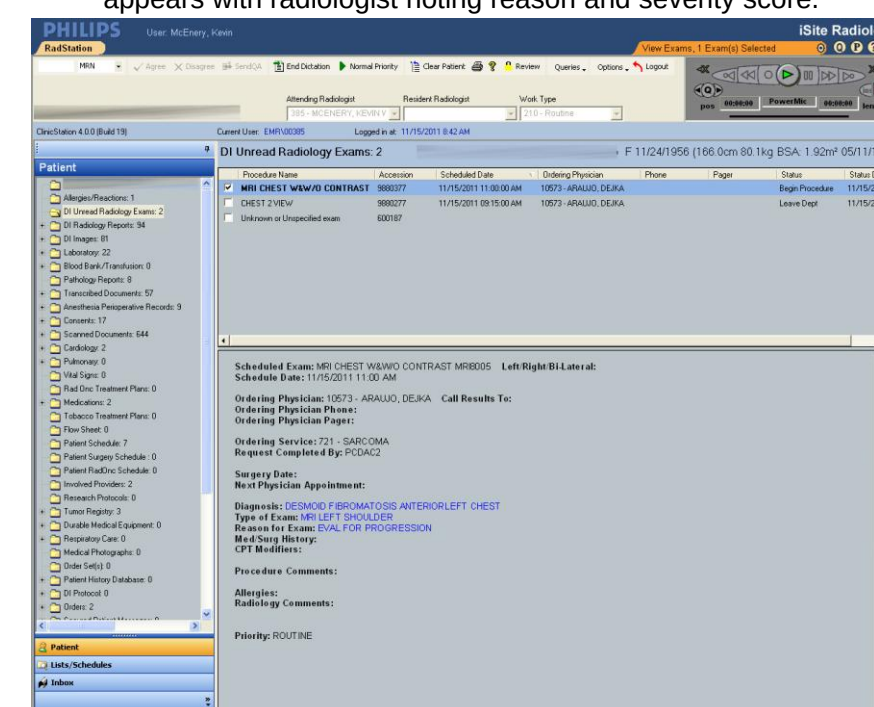


Figure 7. With peer review completed, eRequisition screen returns to standard colorization.

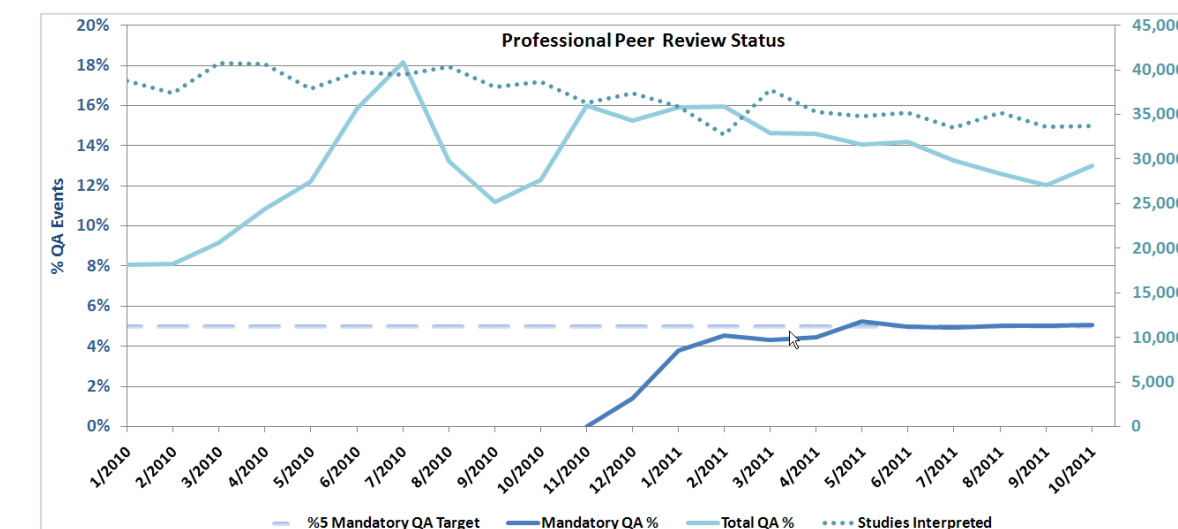


Figure 2. Peer Review Tally for Mandatory and Voluntary Peer Review Events

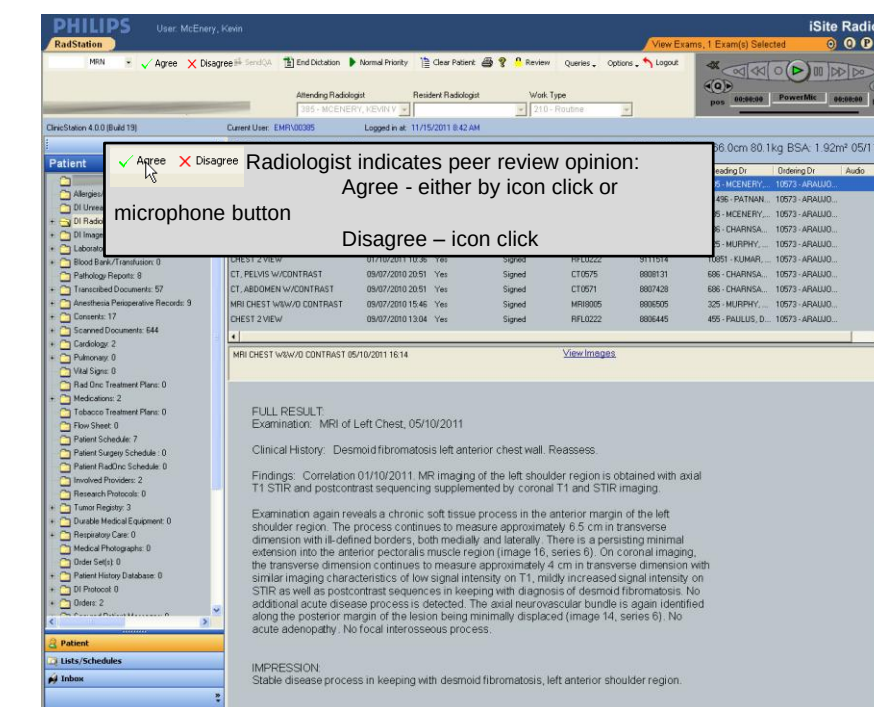


Figure 5. Radiologist click on prior reports folder and the report designated for peer review is displayed.

- Process active for all studies excluding mammography and interventional radiology procedures.
- Comparison studies indentified from those performed within prior 18 months with signed report.
- Peer review event can be logged at any time during the interpretation process
- Resident dictated studies excluded
- Voluntary events can be entered on any available study

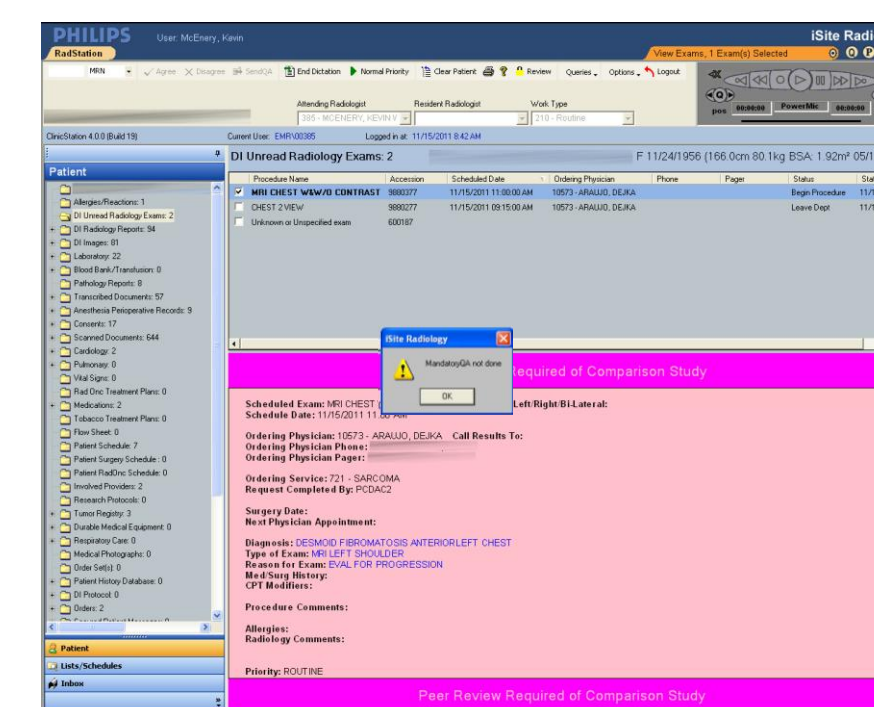


Figure 8. System displays interruptive alert if "End Dictation" clicked and peer review event not yet performed.

BENEFITS

- Professional peer review integrated into radiologist's interpretation workflow.
- Assigned peer review eliminates potential for selection bias of voluntary peer review process.
- Efficient process of data accumulation with single-click process for QA agreement.
- Automatic assignment of studies.
- Process utilizes standard scoring system with discordant studies further assessed by QA review process.
- Opportunity for radiologist to voluntarily enter QA events on non-assigned studies and whenever discordant study identified.
- Peer Review data stored in secure database distinct from EMR data.
 - Data entry enabled in RadStation which allows efficient review for determination of clinical impact.

CONCLUSIONS

The implementation of peer review data collection into the interpretation process provides an efficient method to collect peer review observations. The implementation of a mandatory QA process was intended to mitigate the potential for a positive or negative selection bias in studies selected for QA reporting. Initial experience with system indicates a similar recovery of discordant and concordant QA opinions cases based upon the opinion of the peer review radiologist submission. This seamless, all-electronic system of peer review data collection affords the radiologist much greater efficiency than paper-based data collection or a non-integrated process.

REFERENCE

1. Jackson, VP, Cushing T, Abujudeh HH, et.al., RADPEER™ Scoring White Paper, *J Am Coll Radiol* 2009;6:21-25.

ACKNOWLEDGEMENT

The authors thank Kelly R. Duggan for expertise in exhibit preparation.