



A Peer Learning System Integrated into the Radiology Workflow Improves Case Submission Rates

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Background/Problem Being Solved

Although peer review programs such as RADPEER provide score-based review for assessment of radiologist performance, the focus is more on assessing radiologist error rates than on fostering a culture of life-long learning and continuous improvement. At our institution, there was no existing peer learning solution, and interested radiologists relied on emails and verbal communications to build material for their peer learning conferences. We developed an informatics solution for peer learning with several goals: (1) foster a culture of improvement focusing on educational rather than missed cases alone, (2) integrate the submission process into the radiologist's existing workflow to increase submissions, and (3) build a centralized database of peer learning cases.

Interventions

We created an integrated peer learning solution at the main campus of a tertiary care health enterprise that allows radiologists to submit useful cases as part of their regular workflow.

There are three major technology components to the solution: an integrated submission portal, an automatic weekly report, and a reviewer's GUI for annotation. The underlying database is unique in that it has been submitted to the legal department to ensure protection against legal discovery.

Prior to implementation of the technology, the imaging quality team assembled a group of "peer learning liaisons" who are radiologists representing each imaging subspecialty section. The liaisons serve as peers and would review case submissions within their own subspecialty. The liaisons would also periodically share the submissions in a monthly or quarterly conference setting, depending on the imaging section and submission volume.

The first component is a submission form which is integrated into the PACS viewer (Figure 1). A tab within the viewer auto-populates the accession number and medical record number (MRN) of the current case. When the peer learning opportunity is related to a prior case, the user can click on the prior exam within the patient jacket, and the relevant information would auto-populate. The user can specify a subspecialty for the submission and enter an optional description. As users are typically concerned about interruption to workflow, the process – should the user opt out of the optional Description field – takes <10 seconds to complete.

The second component is a weekly email report. We built, using Python, a weekly email report to the individual quality liaison with that week's new submissions. The liaisons have the opportunity to launch the backend GUI (described below) to close each submission. The report also serves as a section-to-section comparison (Figure 2).

The third component is a backend database. The backend database was submitted to legal department for protection against legal discovery. A GUI was built for facilitating the review. Quality liaisons may assign the learning opportunity to additional sections, assess for the degree of harm and delay to patient care, as well as mark the examination for a peer learning conference. If either potential or actual harm was rendered to the patient, the system prompts the user to submit a serious event report via the established institutional pathway. Furthermore, a reporting functionality allows the liaison to extract and export cases which have been marked in various ways.

Barriers/Challenges

1. Barrier to submission – in the original system, the number of steps to submit a learning case from having to launch an email client, setting the message to confidential, type in patient identifying information, and a reason for submission. The new system autopopulates exam and patient data and can be submitted in 2 clicks.
2. Culture of safety – One challenge against submission for peer learning is the perception of penalizing the interpreting radiologist. We preempt this concern by not capturing the original reading radiologist in the backend database, and subjecting export requests to approval by the Vice-Chair of Quality.

Outcome

We do not have pre-launch peer learning submission rates, as many of the cases were “submitted” verbally and through email. Anecdotally, the peer learning submission rates were less than 5 cases per month on average across the campus. To date, 281 cases have been submitted between 11/15/2018 and 11/15/2019.

Figure 3 shows the total number of case submissions, by week since launch.

Conclusion/Statement of Impact

An integrated and streamlined solution can enhance peer learning programs by improving the case submission rate.

Lessons Learned

1. Barrier to submission - In the new system, a submission can be made within the PACS environment and requires only a few mouse clicks, significantly reducing the barrier to case submission.
2. Although anecdotal, by not focusing on RADPEER scores and “misses,” perceptions of the new system have taken on a more educational tone.

Keywords

peer learning, peer review

Submission of tables, graphs, and pptx is highly encouraged for this abstract type

Figure 1

Peer-Learning Submission

Patient ID:

Accession:

Section:

- Abdominal Imaging
- Breast Imaging
- Cardiac Imaging
- Interventional Radiology
- Musculoskeletal Radiology
- Neuroradiology
- Nuclear Medicine and Clinical Molecular Imaging
- Overnight Radiology
- Pediatric Imaging
- Regional Radiology
- eRad (Teleradiology)
- Thoracic Imaging

Description (Optional). Study will be automatically flagged as "Peer Learning Opportunity":

Send!

Figure 2

Peer Learning Weekly Report: 2019-11-11

This Past Week 2019-11-04 to 2019-11-11

Section	Submitted	Closed	Open Records
Nuclear Medicine and Clinical Molecular Imaging	2	0	282 , 283
Abdominal Imaging	2	0	280 , 281
Thoracic Imaging	1	0	279
Regional Radiology	1	0	278
Musculoskeletal Imaging	1	0	277

Previous Week 2019-10-28 to 2019-11-04

Section	Submitted	Closed	Open Records
Nuclear Medicine and Clinical Molecular Imaging	1	0	273
Abdominal Imaging	1	0	275
Thoracic Imaging	1	1	All Done!
Regional Radiology	1	0	274

Total To Date

Section	Submitted	Closed	Open Records
			34 , 35 , 36 , 37 , 38 , 39 , 40 , 41 , 42 , 43 , 44 , 45 , 46 , 47 , 48 , 49 , 50 , 51 , 52 , 53 , 54 , 55 , 56 , 57 , 58 , 59 , 60 , 61 , 62 , 63 , 64 , 65 , 66 , 68 , 69 , 70 , 71 , 72 , 74 , 75 , 76 , 77 , 79 , 80 , 81 , 83 , 84 , 85 , 86 , 87 , 90 , 91 , 92 , 93 ,

Figure 3

