



## The Information Technology Design, Development and Deployment that Enabled Peer Learning Program Adoption Among Radiologists within a Subspecialized Hospital Practice

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### Introduction

A subspecialized hospital group with an annual exam volume of approximately 350,000 realized their legacy scored peer review program had resulted in significant under-reporting of clinical opportunities, thus preventing progress in improving imaging care. The conventional approach of focusing on errors had fostered a counterproductive culture dominated by fear and risk of retribution. To address this, the department implemented a new peer learning model to increase constructive feedback to radiologists regarding their clinical performance, while also allowing others to learn from these cases in a safe and just environment.

### Hypothesis

Shifting to peer learning required a profound cultural change. However, early on leadership realized this wouldn't be possible without parallel creation of a scalable, intuitive specialty-specific software design and informatics architecture that was context-aware and seamlessly integrated into the clinical workflow. Features would need to acknowledge the human factors that influence participation, support the collaborative environment necessary for effective peer learning, and capture metrics of case content and participation to facilitate successful program adoption.

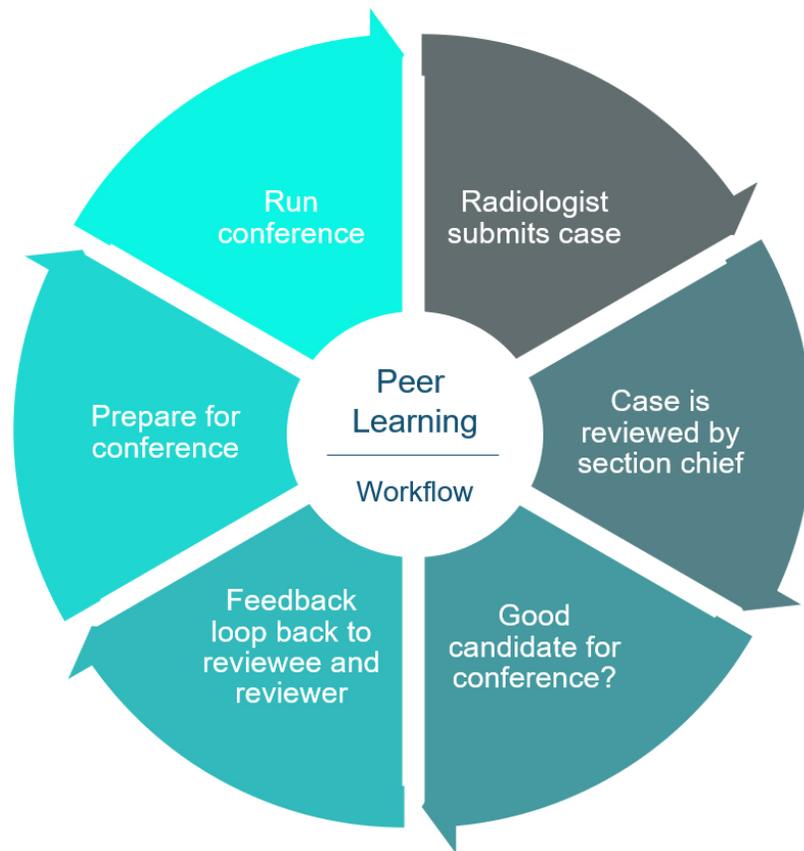
### Methods

Specifications for design and development of a suitable peer learning IT solution included:

- Reducing barriers to participation:
  - Tight bidirectional integration with PACS
  - Patient context awareness
  - Intuitive interface
  - Data anonymization
- Supporting program management:
  - Subspecialty case auto-routing
  - Efficient case review environment
    - Error categorization
    - Embedded communication features
    - Simultaneous conference preparation
  - Conference presentation tool
  - Realtime analytics
  - Tools to track participation and other metrics

The solution makes it easy for radiologists to submit a new case into the peer learning program as part of their regular daily reading workflow. A radiology working in PACS can easily select an exam to submit to peer learning, enter the reason for sharing, and label the case (discrepancy, good call, for discussion). The case is auto-routed to a subspecialty worklist for review. The section head adds teaching points, sends feedback to the original radiologist, and optionally

selects the case for conference presentation. Each edited case submission represents a building block for a future conference, thus crowd-sourcing conference creation to the participating workforce.

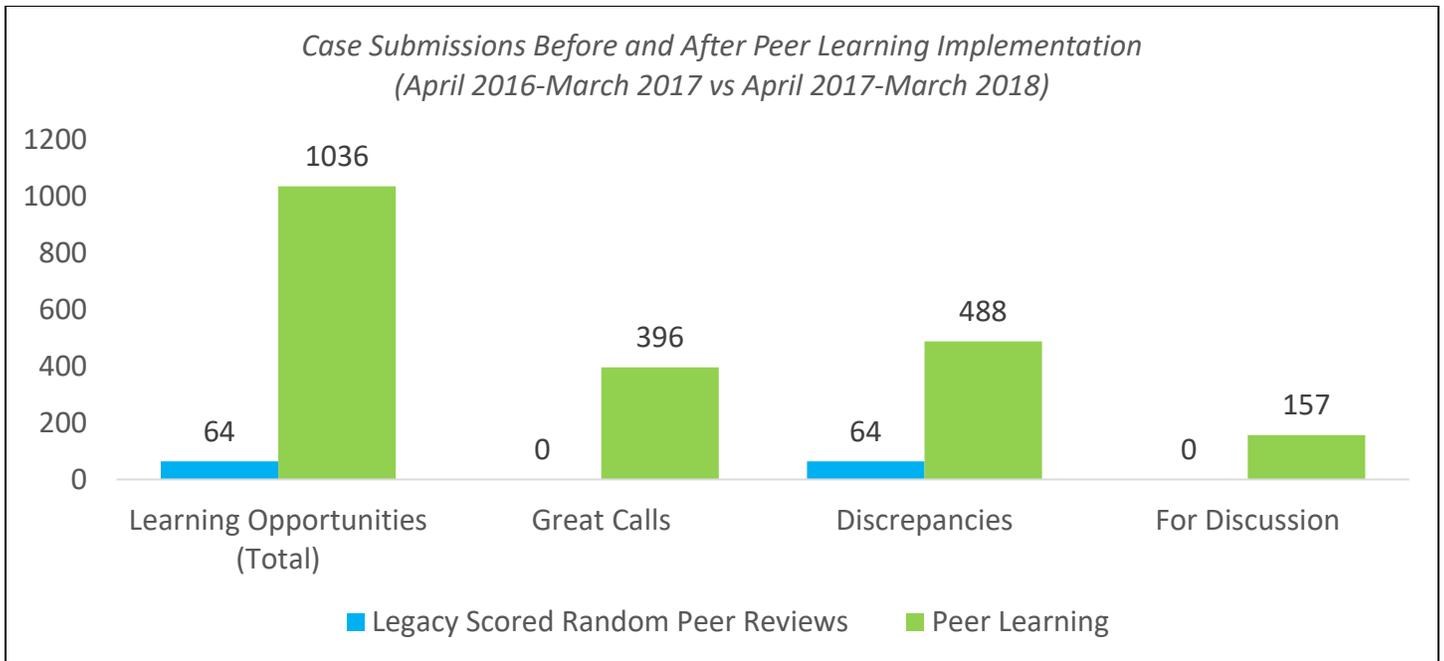


**Figure 1:** The elements of peer learning workflow supported by the peer learning IT solution.

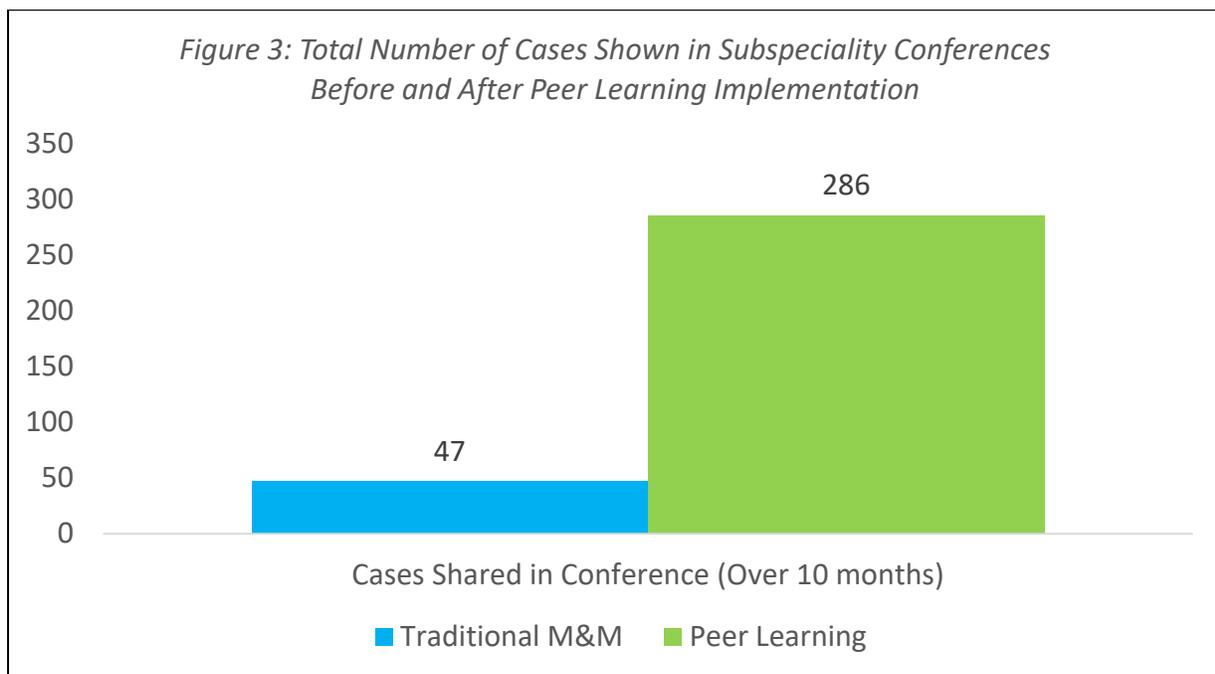
## Results

During the first year of peer learning implementation, the informatics platform supported:

- Total submission of 1036 cases with learning opportunities, an increase of identified learning opportunities by 1,519% over baseline scored peer review.
- Submissions broke down into the following categories: 488 discrepancies (47%), 396 great calls (38%), 157 for discussion (15%).
- Peer learning conference creation and delivery became more efficient: 296 cases were shown in a total of 24 conferences. A range of 8-19 cases were shown in conferences.



**Figure 2:** The informatics platform supported the submission and categorization of a large number of cases



**Figure 3:** The software facilitated the preparation and presentation of a larger number of cases than was achieved previously.

### Conclusion

Implementation of a peer learning culture supported by a purpose-built peer learning IT solution has significantly increased sharing of learning opportunities, increasing amount of feedback to individual radiologists and the number of cases shared across the practice.

### Statement of Impact

A purpose-built peer learning IT solution played a crucial role in enabling a smooth transition to and successful adoption of peer learning

### Keywords

peer review, peer learning