Radiologist Engagement and Satisfaction with AI: Physician Survey after a System Wide Software Implementation

Emily Mungovan, BA[1]; Samantha Furlong, MD[2]; Owen Donnelly RT(R) CIIP[2]; Debra A. Desmarais, MBA, CRA, RT(R)(M)[2]; John Mungovan, MD[2]
[1]Eastern Virginia Medical School at ODU; [2]Southcoast Health System Radiology Imaging Services

Background

Artificial Intelligence (AI) is increasingly being integrated into diagnostic imaging, but further refinement is necessary to achieve widespread trust and adoption. Integrating radiologists' reporting with AI assistance may be the key to streamline workflows and improve the accuracy of imaging results.

Methods

- 22 attending radiologists at Southcoast Health completed a survey that assessed the impact of AI on **accuracy**, **speed**, and **efficiency** of their reporting and their **overall satisfaction** with the AI software.
- Anonymous user data from Southcoast was analyzed to identify **trends in engagement** with AI notifications over a period of 27 months. "Engagement" was defined as one or more radiologists hovering over a positive AI notification for at least 0.5 seconds.

Results

- Radiologists' **overall rating** of AI was **4.1/5;** see figures 2-4 for survey results
- 423,307 imaging studies were analyzed over a 27 month period; see figure 1 for study types analyzed
- AI reported 15,321 **positive findings (3.6%)**
- **95.5% radiologist engagement rate** with positive AI notifications
- **Dip in engagement** observed in April 2024, coinciding with the implementation of a Vertebral Body algorithm that frequently flagged chronic compression fractures in addition to acute findings
- Southcoast radiologists reported **consequent notification fatigue**
- The Vertebral Body algorithm was disabled after three weeks; engagement quickly returned to prior levels

Radiology Solution
• Brain Aneurysm • Fractures - C-Spine • Intracranial Hemorrhage • Vessel Occlusion (M1-M3, P1-P3, A1-A3, ICA, Basilar & V4)
• Incidental Pulmonary Embolism • Pulmonary Embolism
• Aortic Dissection
• ETT Malposition • Fractures - Extremity *(BoneView[1])* • Fractures - Rib • Intra-abdominal Free Gas • Pneumothorax

Figure 1: AI algorithms used at Southcoast Health

Conclusions

- Radiologists are **satisfied** with AI's ability to improve **report accuracy** and **expedite detection** of clinically significant findings
- Consistently **high engagement** with AI notifications **reflects trust** in the software
- Excessive **false positives reduce engagement**
- We anticipate that radiologists' **confidence in AI will grow** as they become more familiar with the technology and algorithms continue to improve

Figure 2: Has AI improved the speed of detecting clinically significant findings?

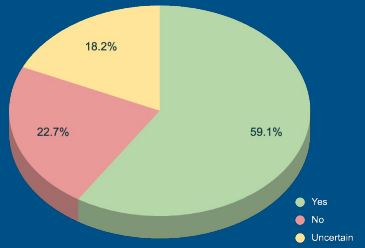


Figure 3: Has AI improved the accuracy of your reports?

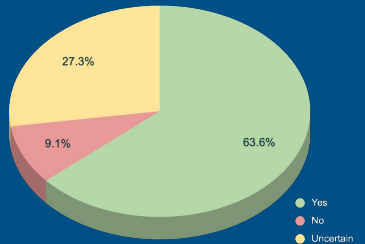


Figure 4: Has AI improved the efficiency of your reporting?

