Proctoring Emergency Radiologists to Promote Clinical Excellence and Ensure Quality of Care

Yale Department of Radiology and Biomedical Imaging
Author Disclosure

- Michael S. Kelleher Jr MD
- Howard P. Forman MD, FACR
- T. Rob Goodman MB BChir
- Jay K. Pahade, MD

- The authors do not have any relevant conflicts of interest to disclose.
Background

• Practice of radiology is prone to different types of errors
• In order to reduce the likelihood of error, many institutions have developed over-read processes
• Our 1571 bed tertiary referral center has 24/7 in house coverage by radiologists with a core group of 5 dedicated emergency radiologists
Background

- As a supplement to our core emergency radiology faculty, fellows (RF) and new subspeciality attendings (NR) provide much of our departments’ after-hours coverage
- NRs and RFs are over-read by subspecialists the following day
- The purpose of this study was to compare the clinical significance and rate of discrepancies of RFs and NRs
Methods

• Retrospective review of all cases in over-read database from 7/1/2012-6/30/2015
• Subspecialists review studies read by RFs and NRs and determine if there is a discrepancy
• One of two QI radiologists then review discrepancies to determine if an addendum is needed, optional, or if no comments are needed
• Feedback is then provided to the interpreting NR or RF
Methods

• The percentage of addendum needed, addendum optional, and no comments cases was determined and p values were calculated.

• Our director of QI then scored each addendum needed and optional case based on the clinical impact of the discrepancy.
Results

- 10796 studies rechecked by 45 sub-specialty attendings
- No significant difference in cases requiring an addendum \((p=0.11)\) between NRs and RFs
- Significant difference in addendum optional cases between NRs and RFs \((p=0.04)\)
### Table 1: Breakdown of Discrepancy Severity for Addendum Needed Cases

<table>
<thead>
<tr>
<th>Error Severity</th>
<th>Fellow (RF)</th>
<th>Attending (NR)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td>23 (19.3%)</td>
<td>20 (23.3%)</td>
<td>0.50</td>
</tr>
<tr>
<td><strong>Likely Malignant</strong></td>
<td>4 (3.4%)</td>
<td>6 (7.0%)</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>Indeterminate</strong></td>
<td>37 (31.1%)</td>
<td>21 (24.4%)</td>
<td>0.29</td>
</tr>
<tr>
<td><strong>Unlikely Significant</strong></td>
<td>37 (31.1%)</td>
<td>30 (34.8%)</td>
<td>0.57</td>
</tr>
<tr>
<td><strong>Typographical Error-Significant</strong></td>
<td>6 (5.0%)</td>
<td>3 (3.5%)</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Typographical Error-Insignificant</strong></td>
<td>12 (10.1%)</td>
<td>6 (7.0%)</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Total % of Addendum Needed Cases:
- Fellow (RF): 1.7% (119/6847)
- Attending (NR): 2.2% (86/3949)

P value: 0.11
Discussion

- Our low discrepancy rates for NRs/RFs are comparable to other studies in the literature
- Advantages of an over-read service to referring clinicians:
  - In-house radiology coverage
  - Final, contemporaneous radiology reads
  - Gives confidence to referring clinicians that new radiologists and moonlighting fellows are providing high quality reads compared to established subspecialists with any errors quickly recognized
Discussion

• Advantages of an over-read service for radiology practices:
  – Meets requirements for part 4 of the ABR’s MOC
  – Satisfies Joint Commission’s system-based practice requirement
  – Serves as a credentialing process for board-eligible fellows and new attendings
  – Ensures high-quality interpretations and allows learning for attending radiologists reading outside their subspeciality and moonlighting fellows through “peer-learning/review” process
Limitations

- Variable experience of established sub-specialty radiologists performing over-reads
- Lack of rigorous definition of case score categories (addendum needed, addendum optional, and no comments) and clinical impact scores
References


