Improving Quality

Reducing Variability in Management of Incidental Thyroid Nodules by Establishing and Monitoring Best Practice Recommendations in a Large Multi-State Radiology Practice

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Presenters & Disclosure of Commercial Interest

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**Disclosures:**
None of the authors nor their immediate family members have a financial relationship with a commercial organization that has a direct or indirect interest in the content.
Literature documents marked variability among radiologists in reporting and management of incidentally detected lesions, including incidental thyroid nodules (ITNs)

Determine if a large practice could reduce variability in management of ITNs through successfully developing, implementing, and maintaining ongoing adherence to a clinical best practice
Clinical Initiative Goals

Save and improve patient lives

Make it easier to practice better

Demonstrate economic and clinical value

Set clinical and quality metrics in our specialty
Methods & Materials for Best Practice Recommendations

1. Extensive review of literature

2. Evidence-based best practice recommendations (BRPs) are developed through collaboration of the practice’s multi-specialty radiologists
   - RP ITN BPRs are primarily based on the ACR white paper on managing ITNs

3. ITN BPRs were then implemented utilizing teaching videos, emails, WebEx seminars, dictation macros, and RP’s own online education portal

The Leading On-Site Radiology Practice in the United States

350+ Radiologists in 9 States
Methods for Initial Evaluation of ITN BPRs Adherence

1. Review of random representative sample of CT chest, neck, and C-spine (CT c/n/s) studies with their reports
   - Across 7 RP sites in 6 states

2. 1,670 CT studies reviewed as baseline, prior to implementation of BPRs
   - Reviewed by 8 radiologists

3. 1,916 CT studies reviewed post implementation of BPRs
   - Reviewed by 9 radiologists
   (8 of these 9 radiologists were the same ones who performed the baseline review)

4. The two sets of data were compared for adherence to RP ITN BPRs
Methods for Ongoing Evaluation of ITN BPRs Adherence

Ongoing review of images by radiologists was not scalable...

• Therefore, complex natural language processing (NLP) algorithms were developed to analyze CT c/n/s reports
  
  • Data was utilized to create monthly local practice and radiologist-specific scorecards which reflected ongoing adherence to ITN BPRs, providing actionable and timely feedback
Results for Adherence to ITN BPRs Study at 7 RP Sites

Incidental Thyroid Nodules

- Adherence to BPRs for Significant ITNs (require U.S. f/u)
  - Baseline: 16%
  - Post-Implementation: 70%

- U.S. Recommended for Reported Insignificant ITNs
  - Baseline: 35%
  - Post-Implementation: 7%

Adherence to BPRs On All Reported ITNs

- Baseline: 56%
- Post-Implementation: 92%
Rolling monthly scorecards utilizing NLP data from analysis of CT c/n/s reports:

### Incidental Thyroid Nodules Best Practice Composite Scores: Year 2016

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Scores calculated by: 50% US recommended on Reported Significant Nodules, 50% no US recommended on Reported Insignificant Nodules
Evaluation of Rolling Monthly Local Practice Scorecards for Adherence to ITN BPRs

1. Scorecards created and distributed beginning June 2016, 16 months post-implementation of ITN BPRs
2. Slippage/inconsistent adherence to BPRs prior to scorecard distribution
3. Improved and sustained adherence to BPRs at majority of local practices post-distribution of monthly scorecards

Radiologist-Specific Monthly Scores for Adherence to ITN BPRs ...

1. Provided to each local practice for its leaders
2. Allow for timely individualized feedback and education as needed
Development & implementation of RP ITN BPRs, followed by ongoing monitoring and feedback on adherence to the BPRs via monthly practice & radiologist-specific scorecards resulted in:

1. Reduced variability in management of ITNs
2. Sustained improvement in BPRs adherence
3. Enhanced patient care through improved quality
4. Recommendations for appropriate utilization of healthcare resources
Next Steps

Learn more about our best practices by:

Visiting www.radpartners.com
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