

# Impact of AI Enabled Workflows in Promoting Adherence to Evidence Based Guidelines

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# Presenters

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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.

# Purpose

- Radiology reports frequently include recommendations for follow-up of specific findings.
- Recommendations should ideally be based on evidence-based guidelines.
- Due to increasing sub-specialization, it has become challenging for radiologists to stay up to date with all guidelines.
- There is significant variability in adherence to these guidelines.
- Implementation of technology in the radiologist workflow can result in significant improvement in adherence to evidence-based follow-up guidelines.

# Clinical Impact of Evidence-Based Guidelines

*Present*  
Ruptured 7cm AAA



70 y/o male presented to the ED with back pain. CT demonstrated a ruptured 7cm AAA.

*4 years prior*  
Original 4.3 cm AAA



Previous imaging demonstrated a 4.3 cm AAA, correctly reported but no specific follow-up recommendations provided.

Our study demonstrated that 40% of AAA ruptures were seen on previous imaging but appropriate follow-up recommendations were not provided (Ahmed S et al. JACR)

# Materials & Methods

- Multi-institutional study
- Tracked 4 conditions for appropriate follow-up recommendation adherence:
  - Incidental lung nodules (LN)
  - Abdominal aortic aneurysms (AAA)
  - Incidental thyroid nodules (ITN)
  - Incidental adnexal cysts (ADX)
- Using natural language processing (NLP) and manual review, a total of 30,298 reports were classified as adherent or deviating from evidence-based guidelines.

# Materials & Methods

## AI-Enabled Change Management Process:

- Evidence-based recommendations programmed into recoMD<sup>®</sup>, a proprietary artificial intelligence tool
- Radiologists educated on the clinical evidence-based follow-up recommendations
- Radiologists trained on the use of recoMD<sup>®</sup> using custom videos and one-on-one IT support
- Program launched
- recoMD<sup>®</sup> uses patient demographic information and NLP for real-time analysis of free context dictation to determine appropriate follow-up recommendation
- Radiologists review the recommendation and confirm if they agree
- recoMD<sup>®</sup> inserts recommendation and reference into Impression

# AI-Enabled Workflow Solution

The screenshot displays the recoMD interface. At the top left is the recoMD logo, powered by radiology partners. Below the logo is a patient information bar for Fred Body, 51M. The main area shows two AI-generated recommendations, each with a color-coded header and a corresponding icon. The first recommendation is for a 4.0 cm abdominal aortic aneurysm (AAA), with a red header and a red icon of a blood vessel. The recommendation text is "Recommend vascular consultation and annual follow-up." with a reference to "J Vasc Surg 2009 Oct;50(4 Suppl):S2-49." The second recommendation is for a 2.0 cm ITN, with a blue header and a blue icon of a thyroid gland. The recommendation text is "Recommend thyroid US." with a reference to "J Am Coll Radiol. 2015 Feb;12(2): 143-50." A sidebar on the left contains icons for a lightbulb, a pulse line, a gear, and a question mark.

recoMD<sup>®</sup>  
powered by radiology partners

Fred Body | 51M ✓

TST-32199889  
US  
US ABDOMEN

**4.0 cm abdominal aortic aneurysm - MACRO: AAA 6** ⓘ

Recommend vascular consultation and annual follow-up.  
Reference: J Vasc Surg 2009 Oct;50(4 Suppl):S2-49.

**2.0 cm ITN - MACRO: THYROID1** ⓘ

Recommend thyroid US.  
Reference: J Am Coll Radiol. 2015 Feb;12(2): 143-50

- Tool launches with voice recognition application
- recoMD<sup>®</sup> widget can reside anywhere on radiologist's monitors
- Color-coded for clinical condition
- One click or voice command places recommendation and reference in the Impression

# Results

## Adherence to Evidence-Based Follow-Up Recommendations in Final Radiology Reports

Best Practice	Baseline Adherence	AI-Enabled Adherence with recoMD®	Performance Improvement
Abdominal Aortic Aneurysms	12%	75%	6.3x
Incidental Adnexal Cysts	24%	62%	2.6x
Incidental Lung Nodules	44%	70%	1.6x
Incidental Thyroid Nodules	35%	78%	2.2x

# Conclusion

Integrating artificial intelligence enabled tools directly into radiologist workflows is an effective way to improve consistent adherence to appropriate evidence-based guidelines in follow-up recommendations.

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