

Multiphasic Plan-Do-Study-Act Interventions Continue to Improve the Appropriateness of Further Workup for Incidental Thyroid Nodules

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No conflicts to disclose.

Purpose

2015 ACR White Paper introduced incidental thyroid nodule (ITN) reporting guidelines to reduce unnecessary workup of thyroid nodules

Our institution's baseline rate of **inappropriate** ITN follow-up recommendations found on chest and neck CTs was **88%**

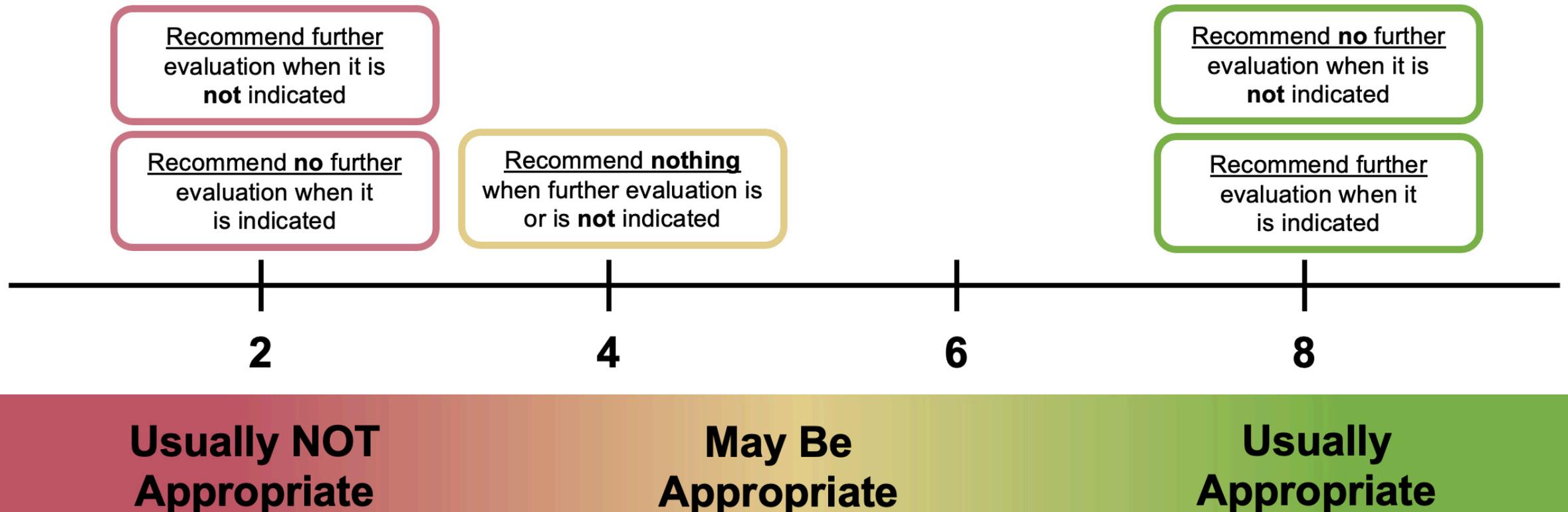
Project aims to improve quality of ITN reporting and decrease the rate of inappropriate ITN follow-up recommendations to **<50%** from October 1, 2019 to January 31, 2020

Use current 2015 ACR guidelines for ITN reporting

Implement three major Plan-Do-Study-Act (PDSA) interventions to achieve and sustain the highest improvement in quality of recommendations

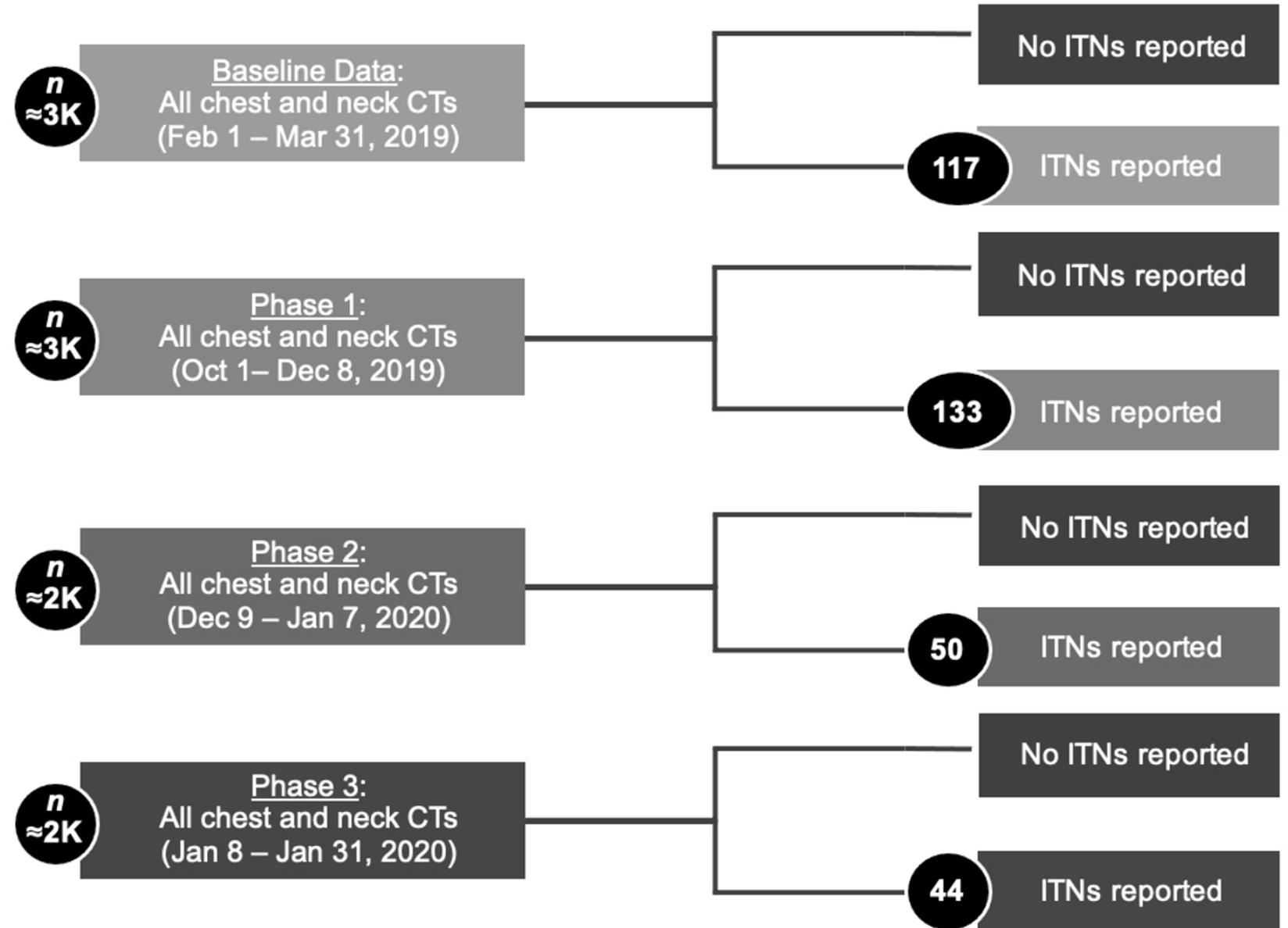
Methods

- Registered demographic, clinical, and imaging data into R-SCAN to generate ACR appropriateness criteria scores for ITN follow-up recommendations
- Scores <5 were grouped as inappropriate recommendations



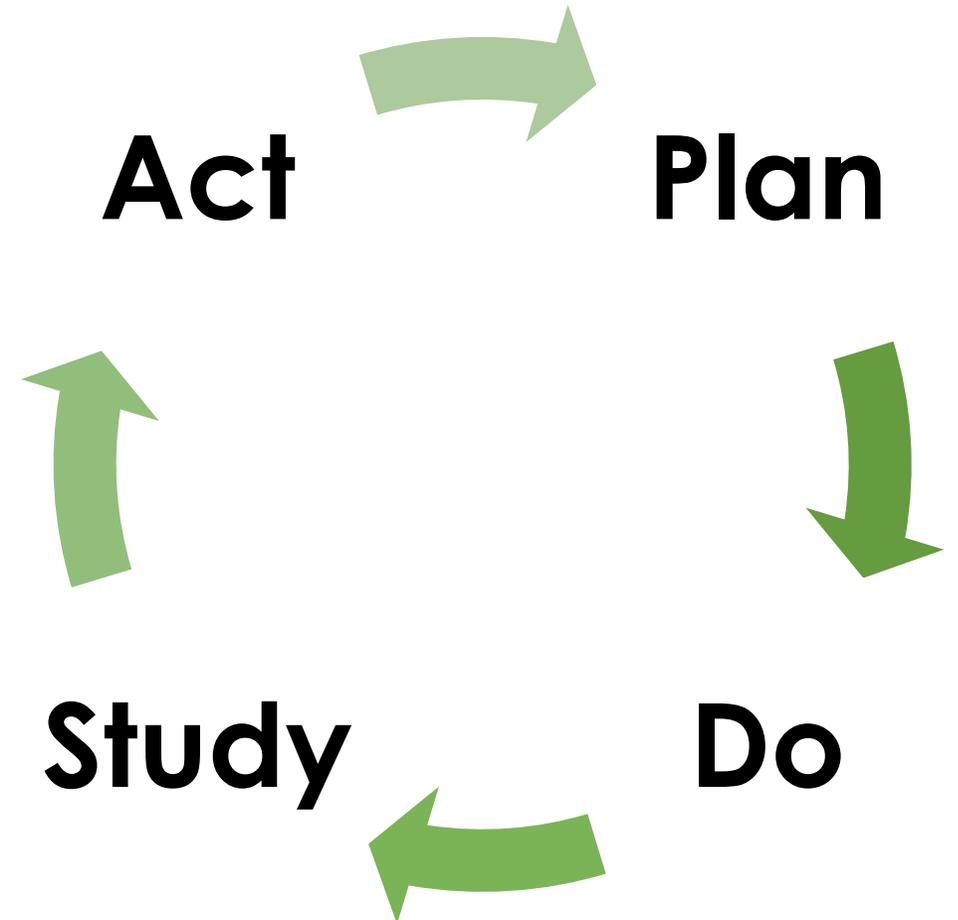
Methods

- Retrospective chart review of ~10,000 chest and neck CTs from Feb 1, 2019 to Jan 31, 2020
- Total of 344 ITNs were reported
- Recorded demographic, clinical, and imaging data of all 344 studies



Methods

- Implemented 3 major PDSA intervention phases over 18 weeks with multiple smaller follow-up interventions
 - Plan: To decrease inappropriate recommendations to <50%
 - Do: Educate faculty and residents of ACR guidelines for ITN reporting
 - Study: Retrospective chart review
 - Act: Determine additional interventions for further improvement



Methods

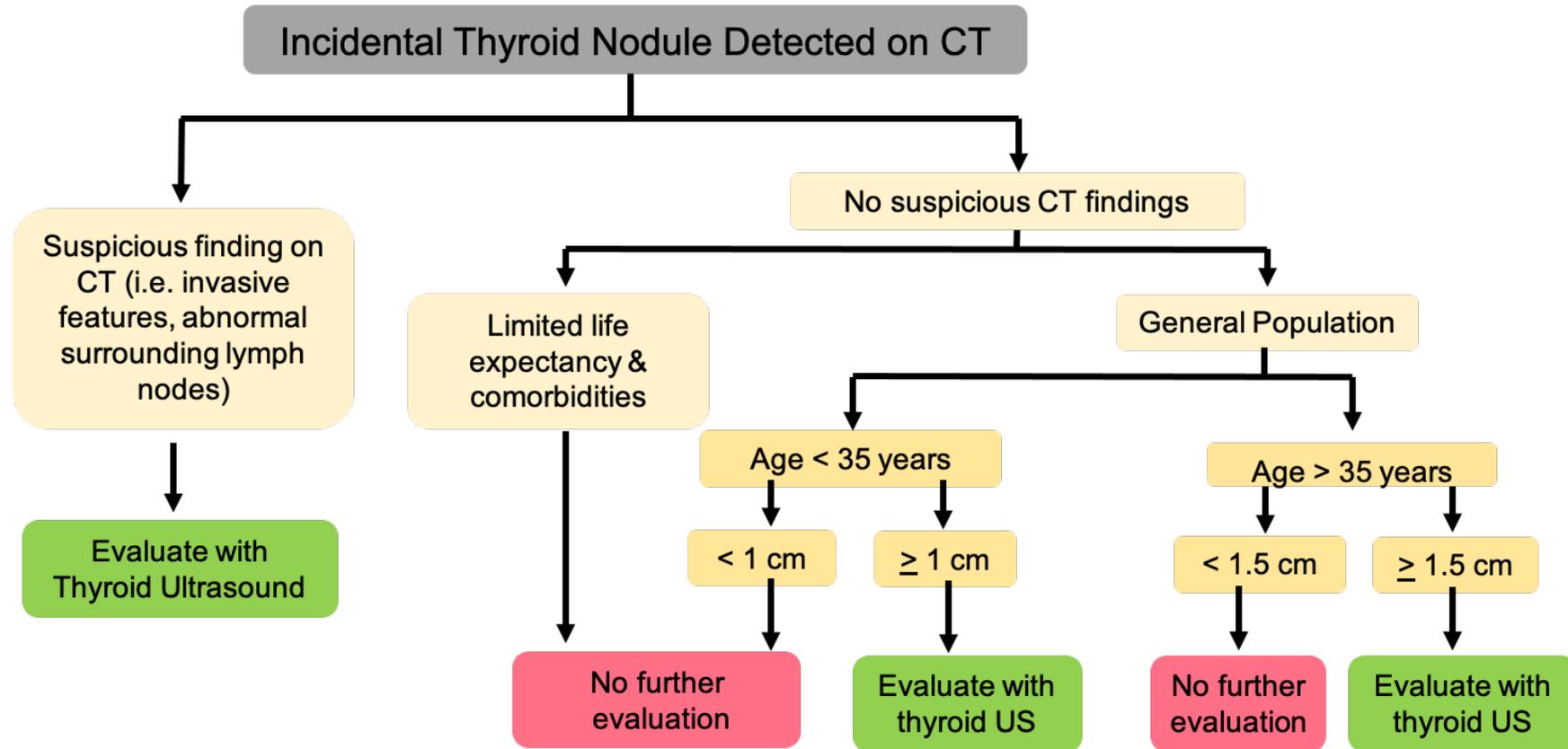
Phase 1: Faculty education

- Oral presentation of white paper guidelines
- E-mail containing ITN guidelines

Phase 2: Resident education

- Oral presentation of white paper guidelines
- Posted algorithm above reading stations and on the hospital website

White Paper Algorithm



Hoang, J et al. Managing incidental thyroid nodules detected on imaging: White paper of the ACR incidental thyroid findings committee. JACR. 2015 Feb 1;12(2):143–50.

Methods

Phase 3: Created a dictation macro to standardize reporting of ITNs

- Includes a drop-down selection menu for:
 - Size of nodule
 - Age of patient
 - ACR ITN Guidelines

Dictation Macro

DISCUSSION:

Thyroid: A thyroid nodule measures [**measurement**], given the patient is [**greater / lesser**] than 35 years old, this nodule [**meets / does not meet**] the 2015 ACR ITN criteria for follow-up thyroid US.

[Follow-up with US for nodules IF:

< 35 yo: nodules \geq 1.0 cm

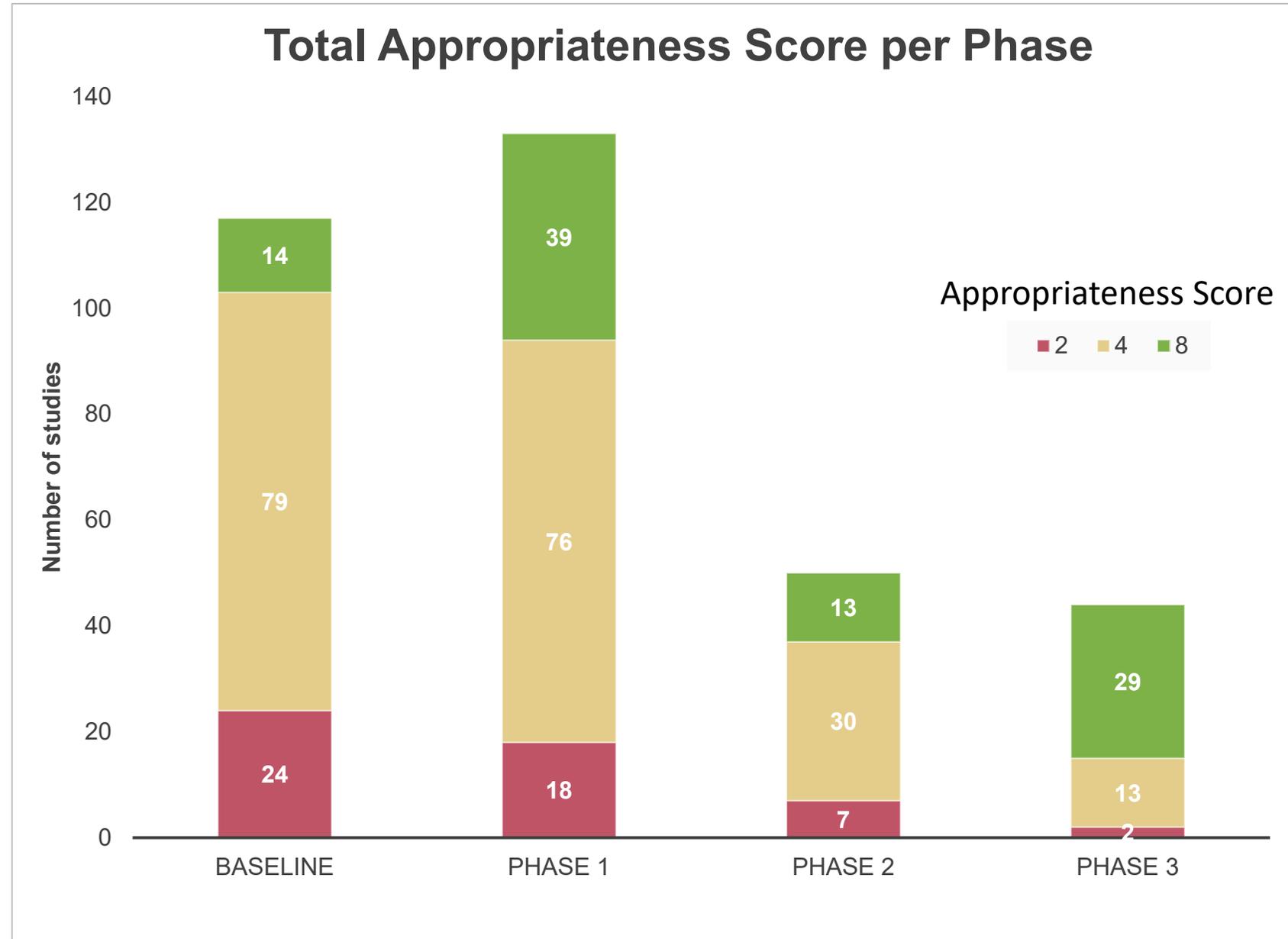
\geq 35 yo: nodules \geq 1.5 cm

OR suspicious findings on CT/MRI/US: abnormal LYMPH NODES (large, calcifications, cystic components, enhancement), INVASION of local tissues by thyroid nodule or PET avid]

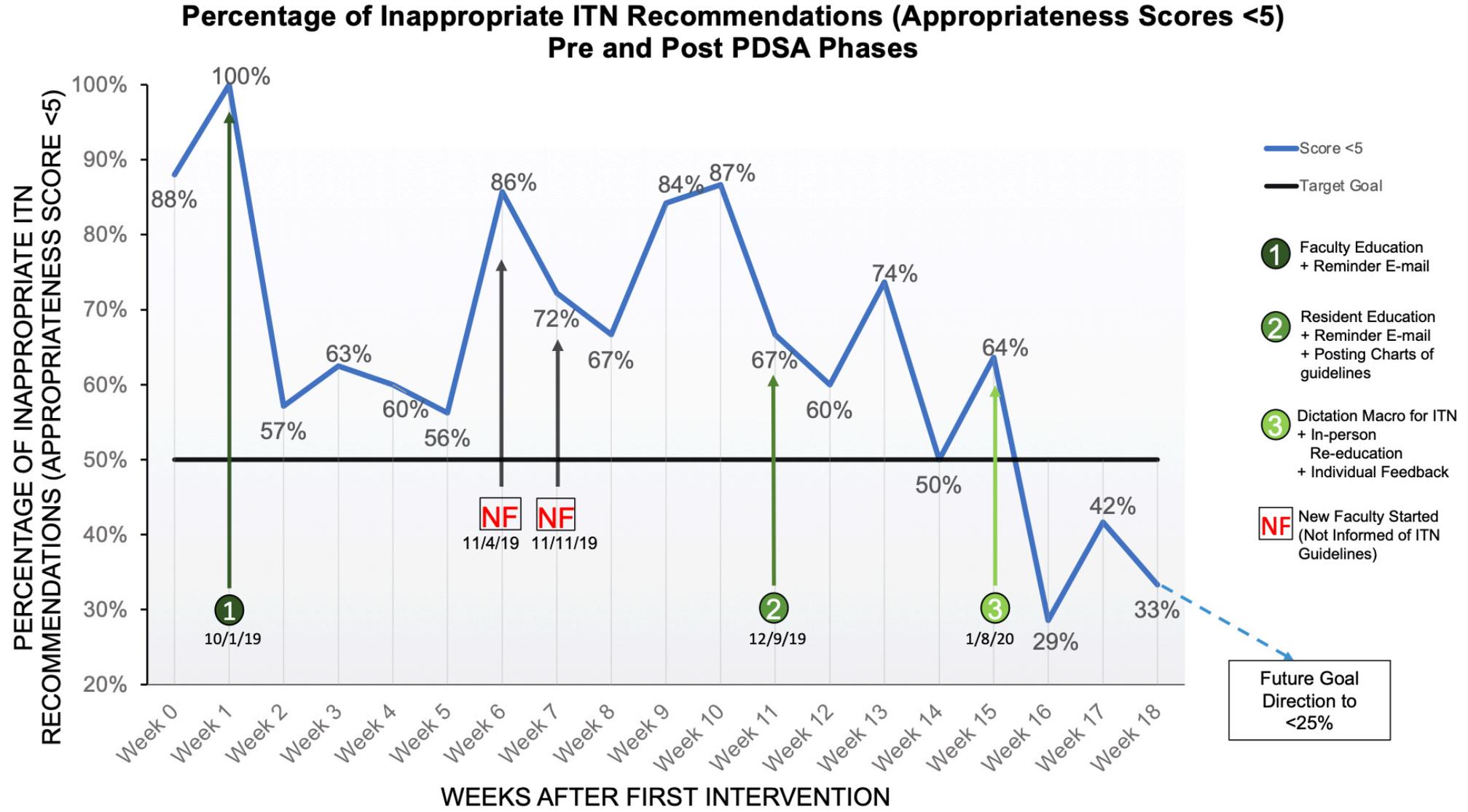
IMPRESSION:

Results

- From Baseline to Phase 1: Significantly increased average appropriateness scores from 4.07 to 4.9 ($p < 0.01$)
- From Phase 1 to Phase 2: Slightly decreased average appropriateness scores from 4.9 to 4.76 ($p = 0.68$)
- From Phase 2 to Phase 3: Significantly increased appropriateness scores from 4.76 to 6.55 ($p < 0.01$)



Results



Percentage of studies dictated with appropriateness score <5 versus weeks after first intervention with additional major intervention phases and multiple smaller follow-up interventions. An initial decrease in studies dictated with appropriateness score <5 corresponds with the first interventional phase, faculty education. Further decline corresponds with the third interventional phase, implementing a standard dictation macro for incidental thyroid nodules (ITNs). The target goal of decreasing inappropriate recommendations for ITNs in our practice to <50% was met between Weeks 15 and 16.

Conclusion

- Multiple PDSA interventions are needed for continued improvement in quality and appropriateness of ITN follow-up recommendations.
- After the third intervention phase, the rate of inappropriate recommendations for ITNs was **below 50%** and sustained for greater than 2 weeks.
- Additional interventions, such as implementing resident score cards and adjusting our target goal to <25%, will be necessary to continue our goal for best practices