

Increasing the Adherence of Imaging Recommendations for Incidental Adnexal Lesions Detected on CT to ACR White Paper

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The authors have no relevant conflicts of interest



Problem Statement

- Incidental adnexal lesions common
 - Up to 18% of postmenopausal women¹
 - Majority are benign but some could be ovarian cancer
- Imaging recommendations often do not adhere to published ACR guidelines²
 - 60% reports at BWH/DFCI not adherent
- Consequent variability in care and unwarranted patient anxiety³



- **Aim: To improve the adherence rate of imaging recommendations for incidental adnexal lesions detected on pelvic CT to ACR white paper**

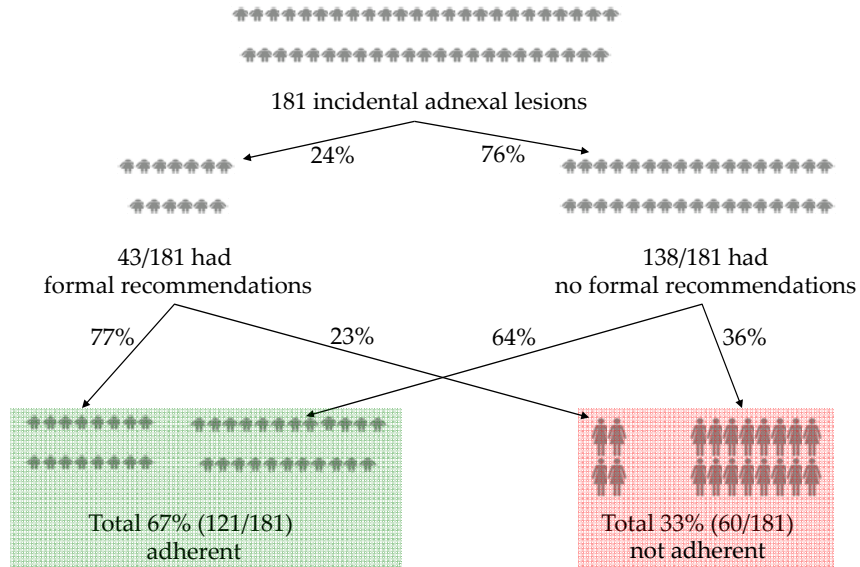
- IOM aims addressed: Effectiveness, equity, efficiency, patient centeredness
- ACGME competencies: Medical knowledge, patient care & procedural skills, practice based-learning and improvement, systems based practice

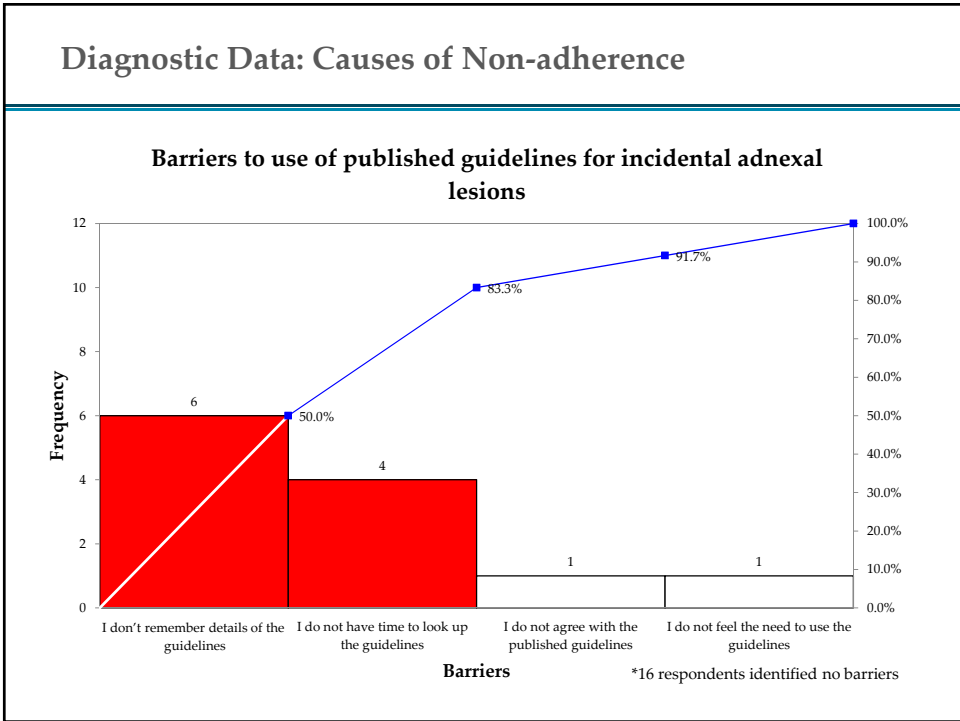
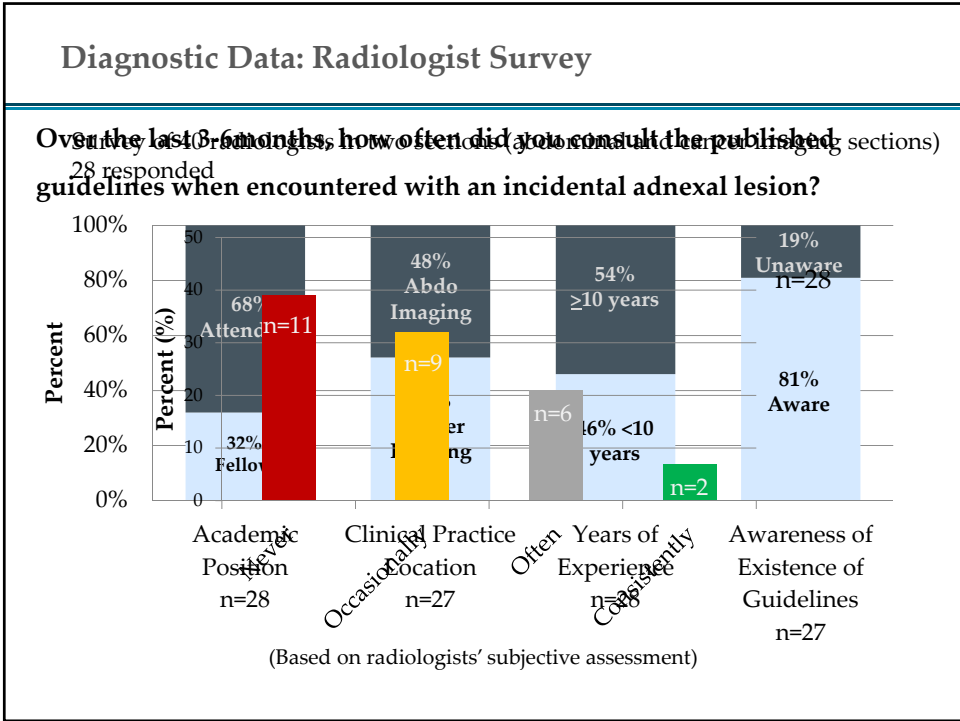
¹Modesitt et al. Obstet Gynecol 2003. ²Patel et al. JACR 2013. ³Kim et al. JACR 2016.

Methods

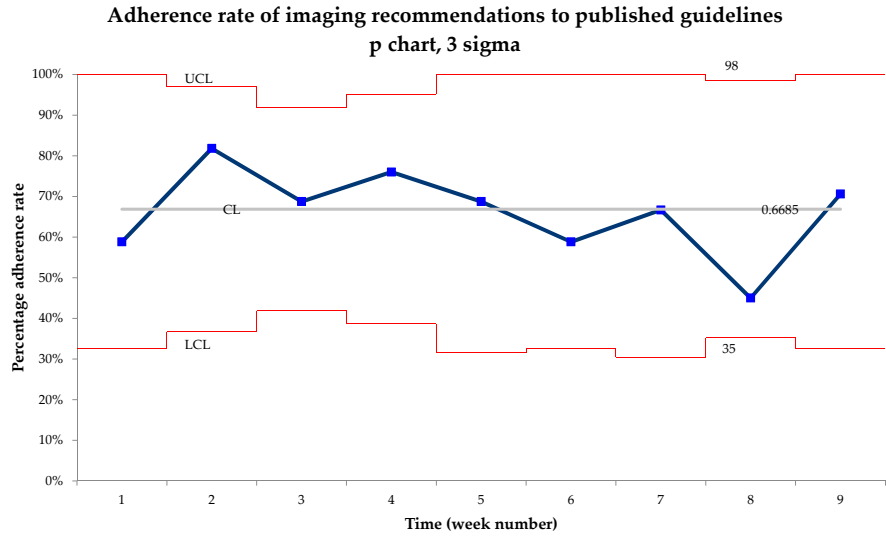
- Baseline rate of adherence to ACR white paper
 - Screened all pelvic CT reports between October 22, 2016 and December 22, 2016
 - 181 reports with incidental adnexal lesions
 - Manually reviewed reports to assess adherence
- Understand the barriers to use of the ACR white paper
 - Surveyed 40 radiologists who routinely read pelvic CTs
- Intervention
 - Intervention designed based on the most common barrier identified
 - Implemented on December 23, 2016
- Post-intervention rate of adherence to ACR white paper
 - From December 23, 2016 to February 15, 2017
 - 148 reports with incidental adnexal lesions; adherence recorded
- Change data
 - Change in pre- and post-intervention adherence rate compared using
 - Fisher's exact test
 - Statistical process control (SPC) p-chart, with 3 sigma controls

Baseline Data: Rate of Non-adherence





Baseline Data: Run chart



Interventions

- Radiologist education
- Interactive decision support tool
- Integration of guidelines in radiology workflow – powerscribe macro

Summary of Recommendations: ACR white paper on incidental adnexal findings

Benign appearing cyst: If the lesion is

- <10 cm
- Oval or round
- Unilocular
- Uniform attenuation or signal (Layering hemorrhage acceptable if premenopausal)
- Regular or imperceptible wall
- No solid area or nodule

Age	<1 cm	>1-4.3 cm	>4.3-5 cm	>5 cm
Premenopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*
Early post-menopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*
Late post-menopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*

Probably benign cyst: Features of benign cyst, except

- <10 cm
- Angulated margins
- Not round or oval
- Poorly imaged portion (streak artifacts)
- Reduced SNR (technical, unenhanced, etc)

Age	<1 cm	>1-4.3 cm	>4.3-5 cm	>5 cm
Premenopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*
Early post-menopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*
Late post-menopausal	No (U)	No (U)*	0-12 wks (U)*	0-12 wks (U)*

Lesions with other imaging features: If lesion has

- Solid component
- Mural nodule
- Septations
- Higher than fluid attenuation
- Layering hemorrhage if postmenopausal

Age	<1 cm	>1-4.3 cm	>4.3-5 cm	>5 cm
Premenopausal	No (U)	No (U)*	No (U)*	No (U)*
Early post-menopausal	No (U)	No (U)*	No (U)*	No (U)*
Late post-menopausal	No (U)	No (U)*	No (U)*	No (U)*

Level of evidence: *Oxford 5, **Oxford 2b

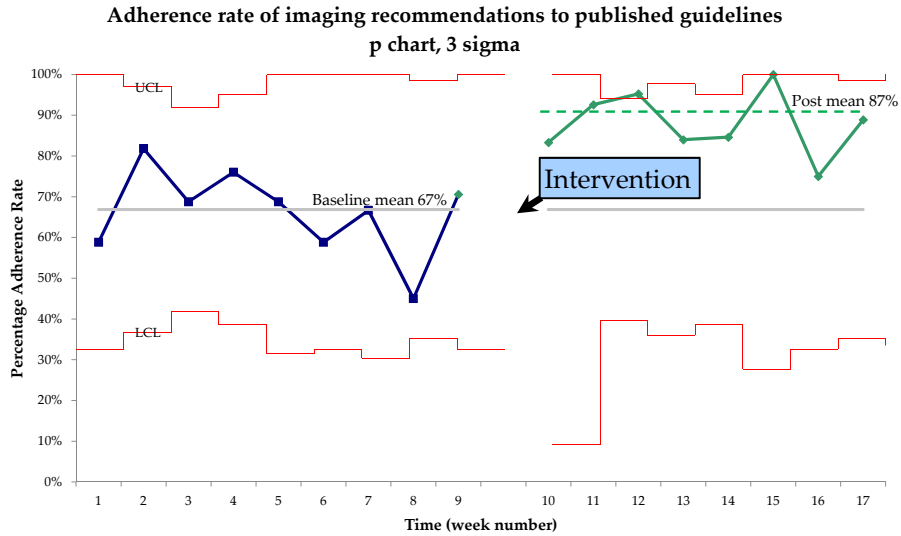
Type of Lesion:

Age:

Size:

Recommendation: **Pelvic ultrasound at 6-12 weeks**

Change Data



Conclusions

- Adherence rate of imaging recommendations for incidental adnexal lesions in the abdominal and cancer imaging sections increased from 67% to 87%
- Radiologist education and easy access to guidelines had greatest impact on adherence rate

Thank you!

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