Patient Friendly Reporting for Lung Cancer Screening CTs

Creating a workflow for patient friendly radiology reporting

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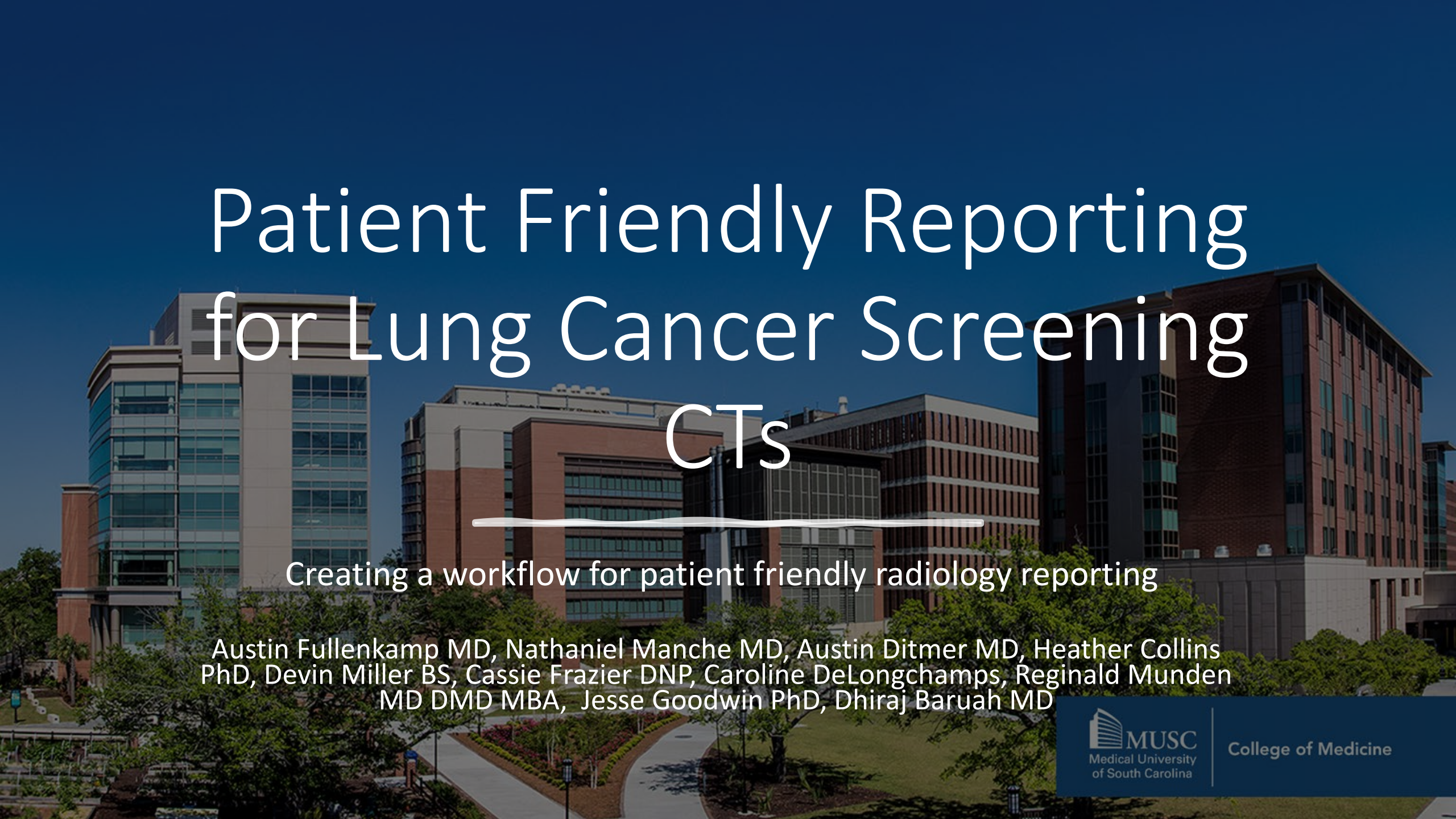
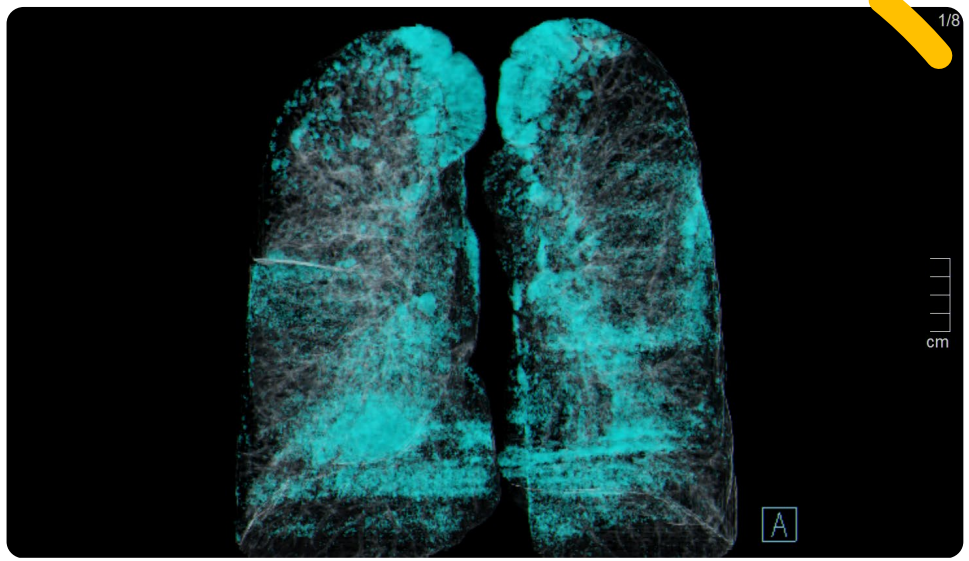
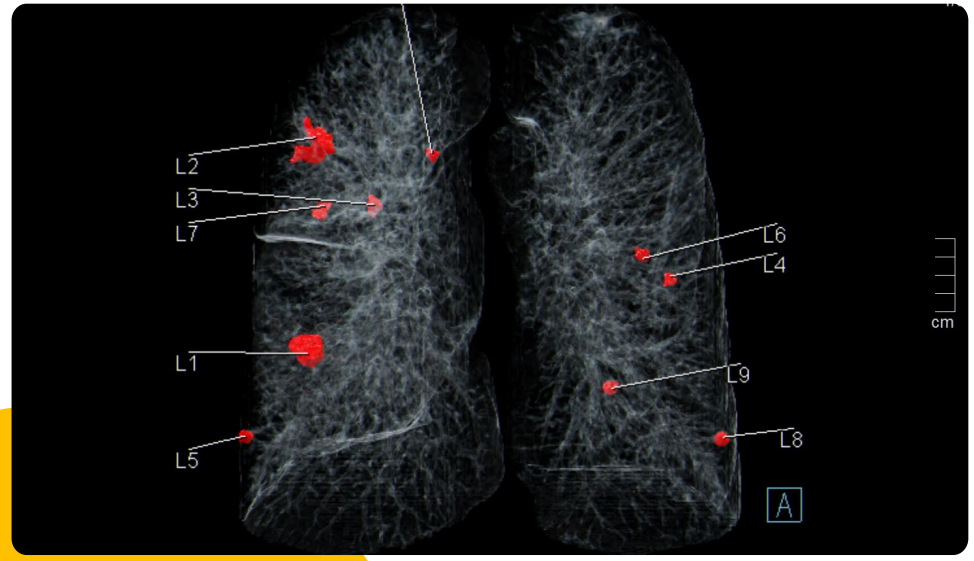


Current Situation

- Patients want to know their results as soon as possible and frequently have access to the report
- Reports are filled with medical jargon and sections intended for interpretation by clinicians
- Patients have the right to understand their reports, yet reports not catered to their knowledge level





Creating the Report

- Create a patient friendly report that allows patients to understand their clinical condition utilizing principles backed by literature
  - *Simple graphics*
  - *Cater to knowledge level*
  - *Presenting as little information as necessary*
  - *Use of color coding*
- AIRAD images of Lung Cancer Screening CT which utilizes imagery to show lung nodules and emphysema through 3D renderings and color coding
- Minimizing medical jargon and removal of sections not helpful to comprehension of the report
- Simplified language in the report
- Added Ca scores

INDICATION: Lung Cancer Screening CT scan

COMPARISON: Lung cancer screening 7/29/2020

TECHNIQUE: Low dose axial images are acquired from the lung apices through the lung bases.

Scanner: Emotion 16 (2007) NCT1. Slice Thickness: 1.5 mm. CTDIvol: 2.9 mGy.
DLP: 98.5 mGy-cm.

FINDINGS:
Nodule Location: Right upper lobe
Image number: 119
Diameter: 8 x 3 mm mm, enlarged
Density: Solid

Right upper lobe groundglass nodule 5 mm (series 4 image 97), stable.

Emphysema: Mild.
Bronchial Wall Thickening: Absent.
Other Lung Findings: Additional scattered scarring and scattered small ground glass opacities unchanged.

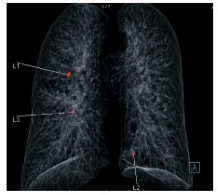
Coronary Artery Calcium: Prior coronary artery bypass.
Heart size stable. Anterior pericardial calcification.
Mediastinum: No adenopathy
Pleura: Unremarkable.
Bones/Chest Wall: Bilateral breast prostheses. Prior median sternotomy with proper healing.
Upper Abdomen: Unremarkable.

IMPRESSION:

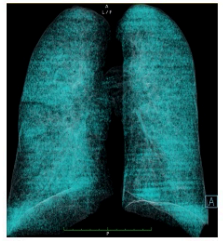
Enlarged elongated right upper lobe solid nodule, with greatest diameter now measuring 8 mm.

Lung RADS 4A: Follow up in 3 months.

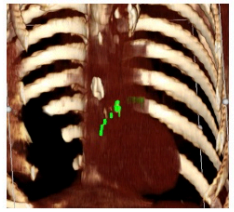
Name: 10
Date of Scan:
Findings:
Right upper lobe 8 x 3 mm nodule, which has increased in size (Marked L1 in red, other small reds are not significant).



Mild emphysema (Lighter color the more emphysema). Emphysema is damaged lung from smoking.



Calcium in heart vessels (green) - significant



Impression:
Increased size of lung nodule – cancer not excluded.
Recommendation: Next Chest CT in 3 months

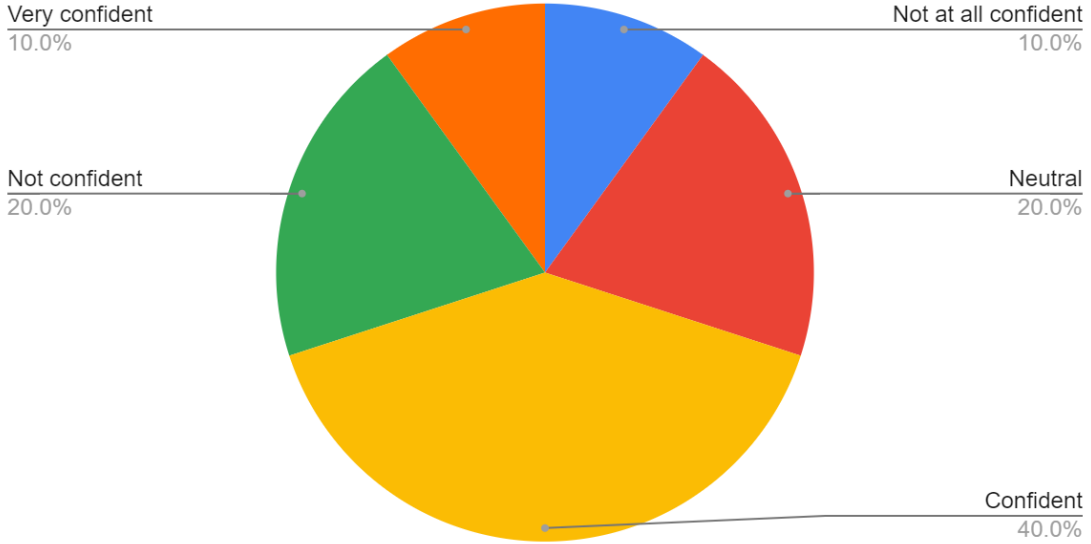
There is significant calcium within your heart vessels.

Patient Surveys

- 32 patients were recruited from the Lung Cancer Screening Program through our Patient Friendly Centered Care Team
- Survey questions
  - The overall appearance of the standard/patient friendly report is
  - How comfortable are you with the words and descriptions used in the standard/patient friendly report?
  - How confident are you in your understanding of the standard/patient friendly radiology report?
  - Including 3D Images was helpful?
  - Including color images was helpful?
  - Including a normal image would help me understand what is abnormal?

Results: Standard Report - Understanding, Appearance, Descriptions

How confident are you in your understanding of the standard radiology report



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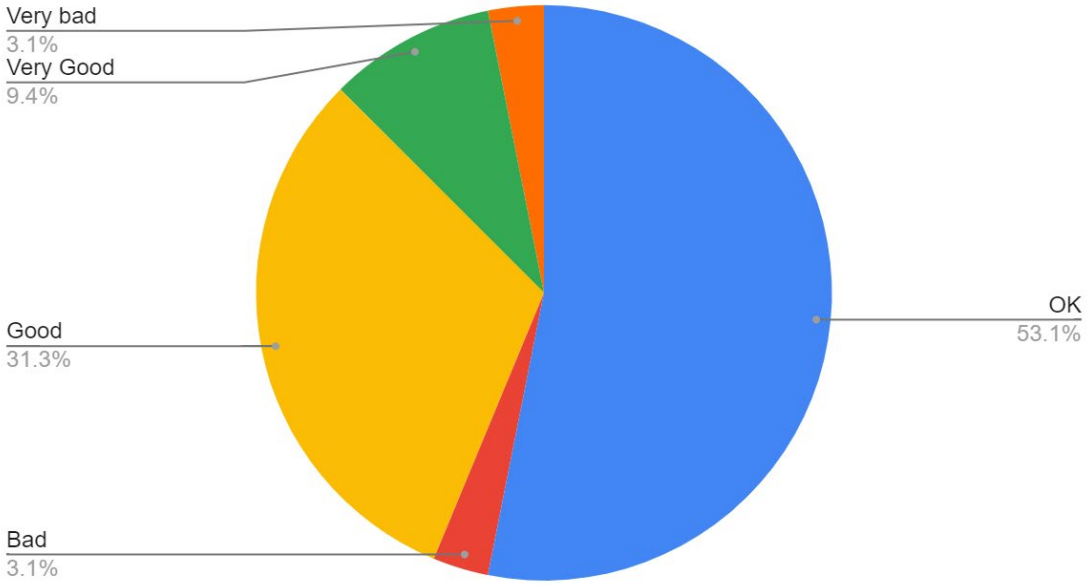
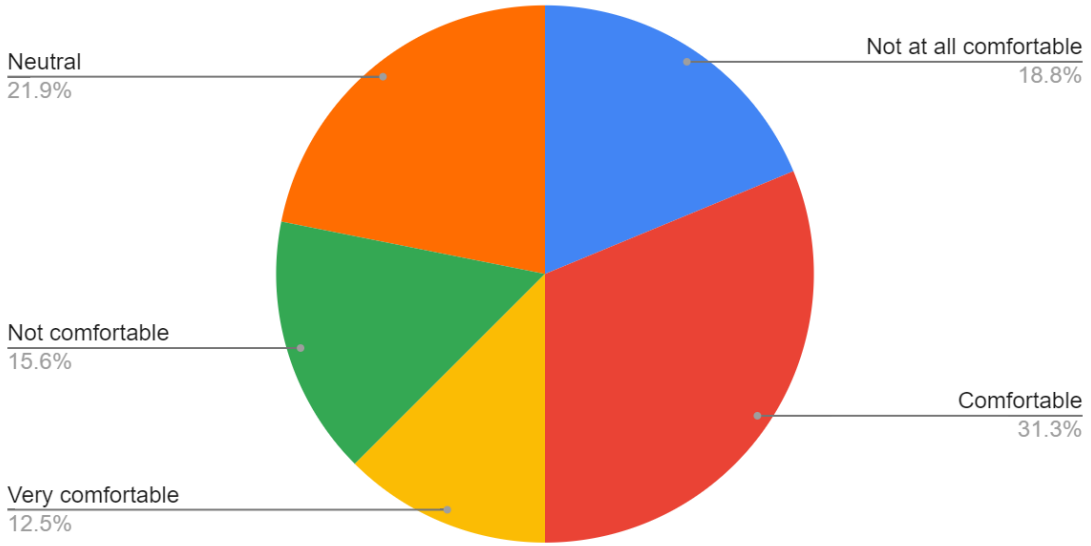
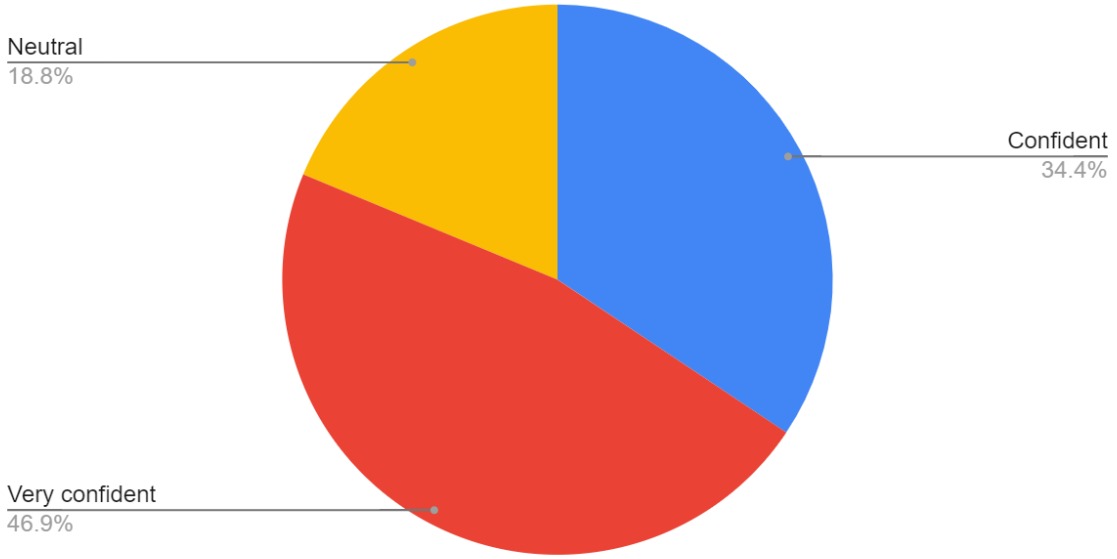


How comfortable are you with the words and descriptions used in this standard radiology report?

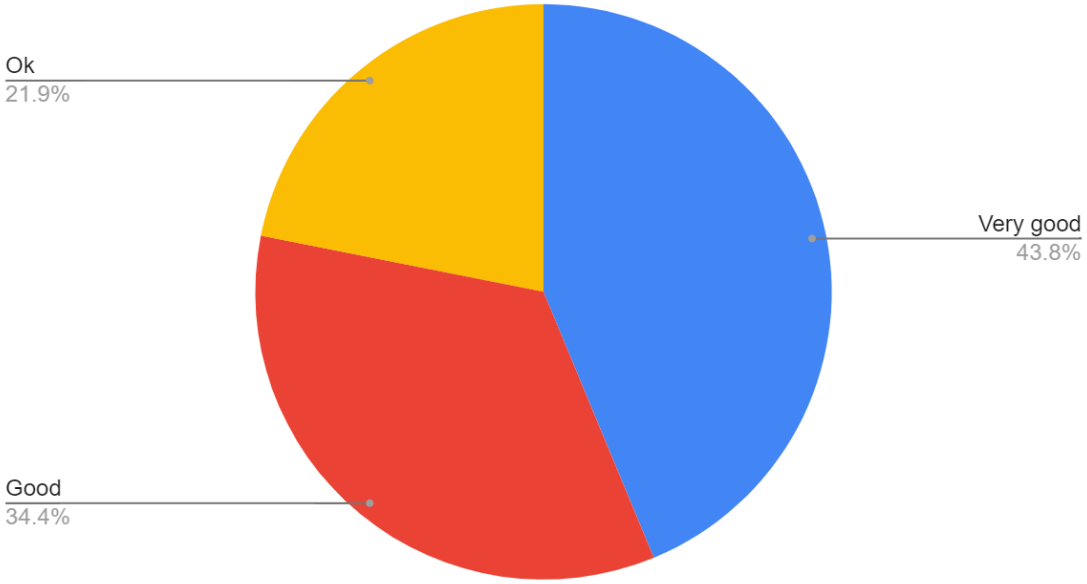


Results: Patient Friendly Report - Understanding, Appearance, Descriptions

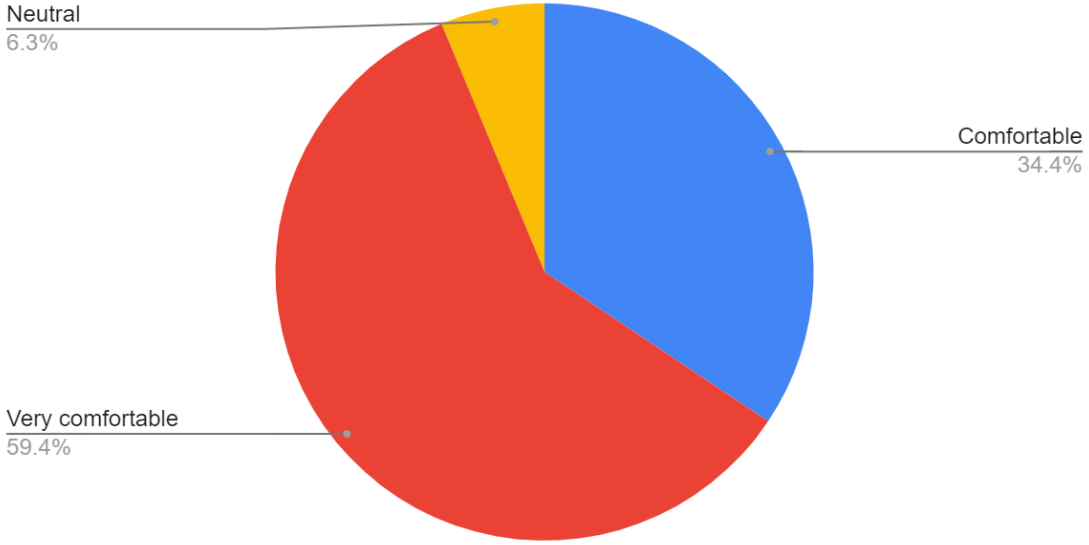
How confident are you in your understanding of the patient friendly radiology report?



Overall appearance of the patient friendly radiology report is:

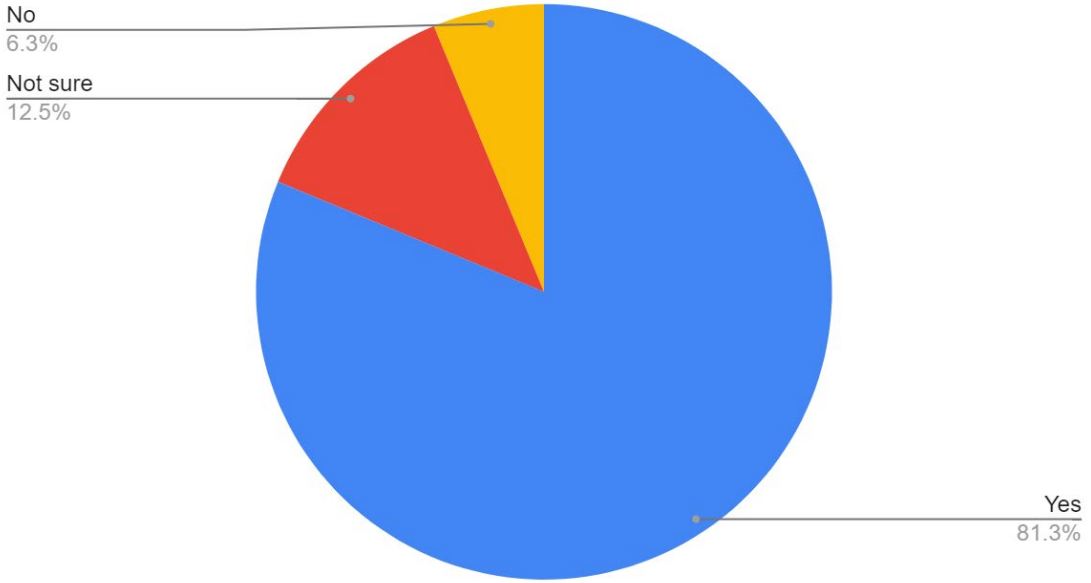


How comfortable are you with the words and descriptions used in the patient friendly radiology report?

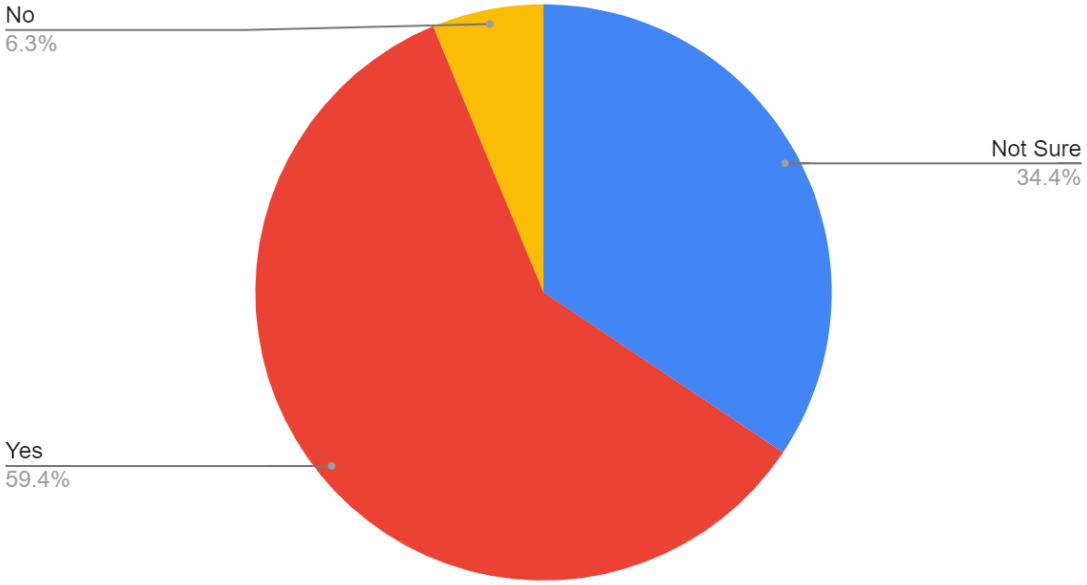


Results: Patient Friendly Report – 3D Images, Color Images, Normal

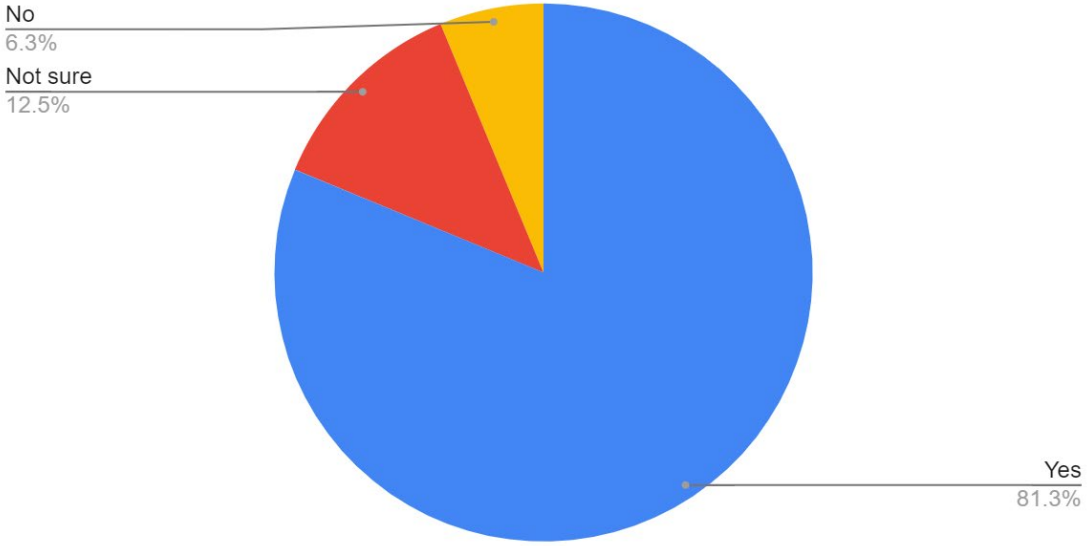
Adding color images to the report was helpful.



Including colored 3D images was helpful



Including a 'normal' image (not done in our report) will help me understand what is abnormal.



Statistical Analysis

- Ratings were combined into the top two categories (e.g. very comfortable and comfortable) and compared against the bottom three categories (e.g. neutral, not comfortable, and not at all comfortable) using chi-square tests.
- The patient friendly report was significantly more likely to have a rating of comfortable or very comfortable than the standard report ($p < .001$).
- The patient friendly report was significantly more likely to have a confident rating than the standard report ($p = .02$).
- The patient friendly report was significantly more likely to have a good rating than the standard report ($p = .002$).

Conclusion

- Patient friendly reports improved participants comfort with words/descriptions in the report and improved their confidence in understanding the report.
- Adding Color/3D images was helpful.
- Limitations of this study are the small sample size of 32 participants and the confidence survey question was added after the initial 12 participants were surveyed.

Thank you!