

A SINGLE-CENTRE QIP ASSESSING FOUNDATION DOCTORS' RADIOLOGY KNOWLEDGE PRE AND POST TEACHING INTERVENTION

Background

- An investigation into a serious incident at the trust highlighted a knowledge gap for some junior doctors around best practice in safely requesting and interpreting imaging and reviewing reports. A lack of local formal radiology teaching for foundation doctors (FDs) was also noted.
- More broadly, several studies have highlighted a paucity of undergraduate radiology teaching relative to the growing role of imaging in clinical practice (1, 2). FDs request and informally review a huge volume of imaging, yet medical graduates often perceive their radiology education to be insufficient (3, 4).

Aims

- To understand the perceptions of FDs about their knowledge and confidence in requesting, interpreting, and reviewing the results of imaging investigations, and to identify key knowledge gaps
- Using the information gained, to design an evidence-based teaching intervention to address these gaps, and then to assess the effectiveness of the intervention

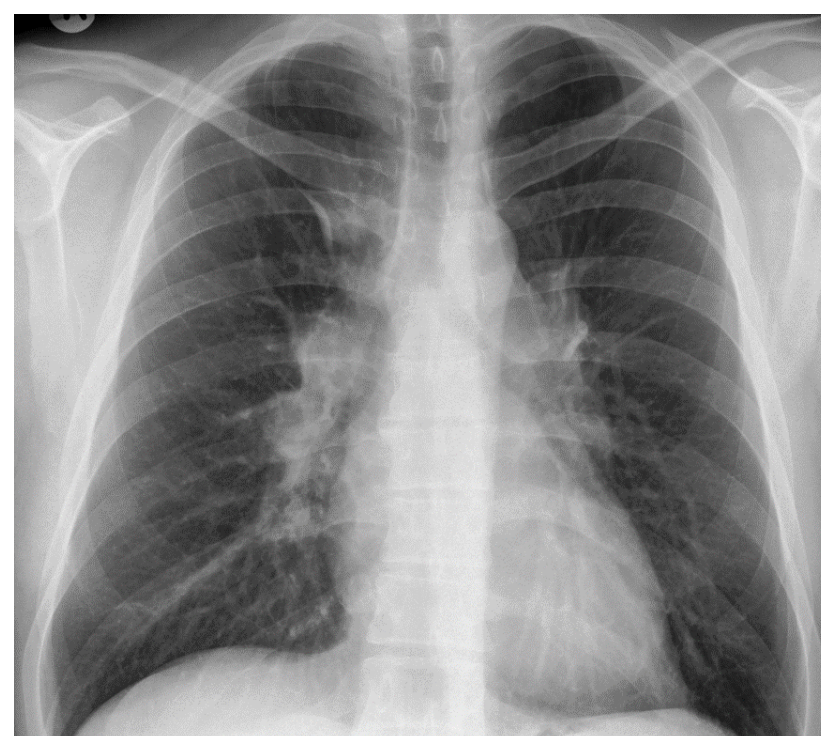
Methodology

A pre-intervention survey was designed to collect information about FDs' confidence and understanding in requesting, interpreting, and reviewing imaging results (5). The survey evaluated which topics FDs considered most useful for further teaching, and their preferred teaching methods.

The GoogleForms survey was circulated through various communication channels to the 93 FDs employed at the trust, with several follow up reminders. All survey responses were recorded anonymously.

The survey results were analysed and used to inform the design of a one-hour teaching session which was delivered in person to FDs. Based on the survey results, the teaching covered:

- how to select and correctly request appropriate imaging investigations
- comprehensive guide to contacting the radiology department in and out of hours
- case-based interactive advanced chest x-ray (CXR) teaching focusing on review areas



CXR from the teaching session showing bilateral hilar lymphadenopathy

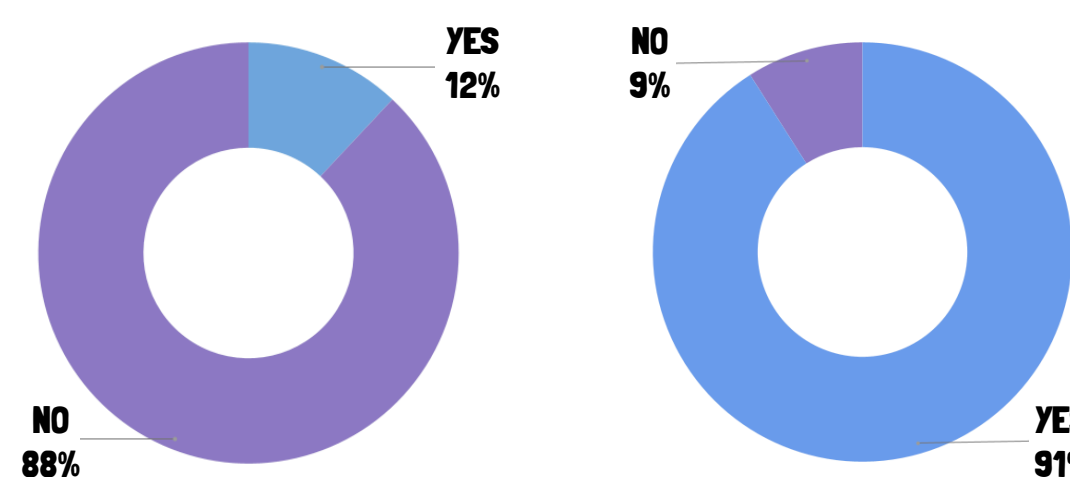
Immediately after the session, FDs were invited to complete a focussed follow up survey. The project was registered with the local Clinical Audit and Effectiveness department.

Results

Pre-Teaching Survey Results

- 32 of 93 (34%) FDs completed the pre-teaching survey.
- 12% of respondents had received teaching on how to effectively complete a radiology request.
- 45% of respondents did not always know how to contact radiology in and out of hours.
- The average score for self-reported confidence in requesting appropriate imaging was 3.37/5.
- 97% felt that CXRs were the most important investigation for FDs to be able to interpret.
- Interactive case-based discussion was most (71%) respondents' preferred teaching method.
- The average score for self-reported confidence in CXR interpretation was 3.41/ 5.
- Only 60% considered their radiology knowledge to be sufficient for their role and 100% felt that FDs would benefit from additional radiology teaching.

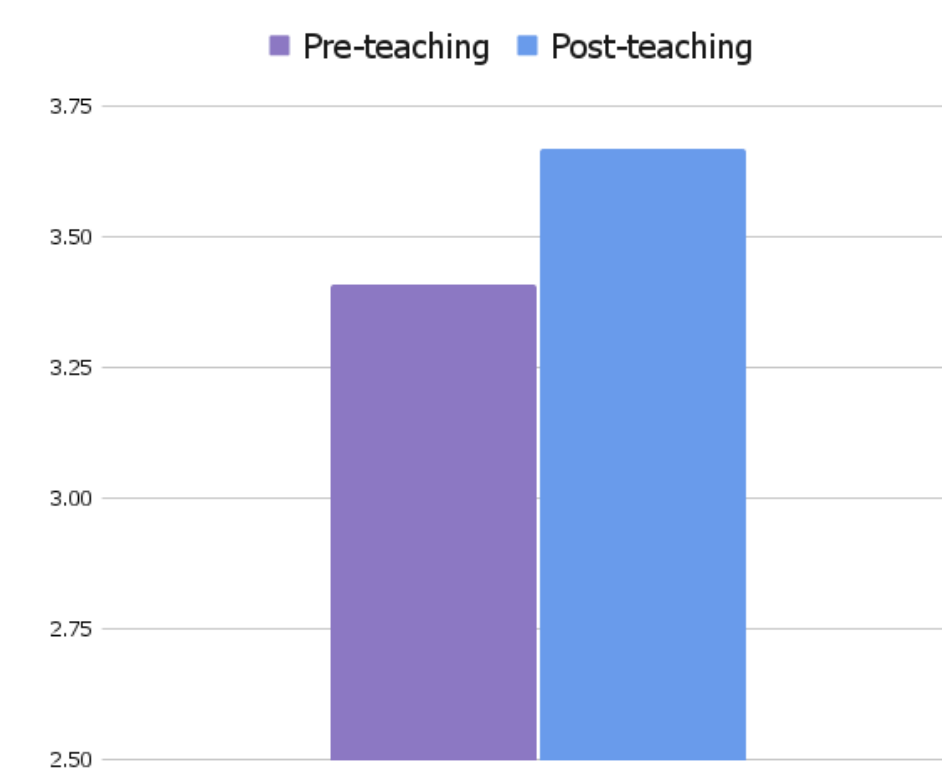
Percentage of FDs who had received teaching on filling out radiology requests pre- (left) and post- (right) intervention



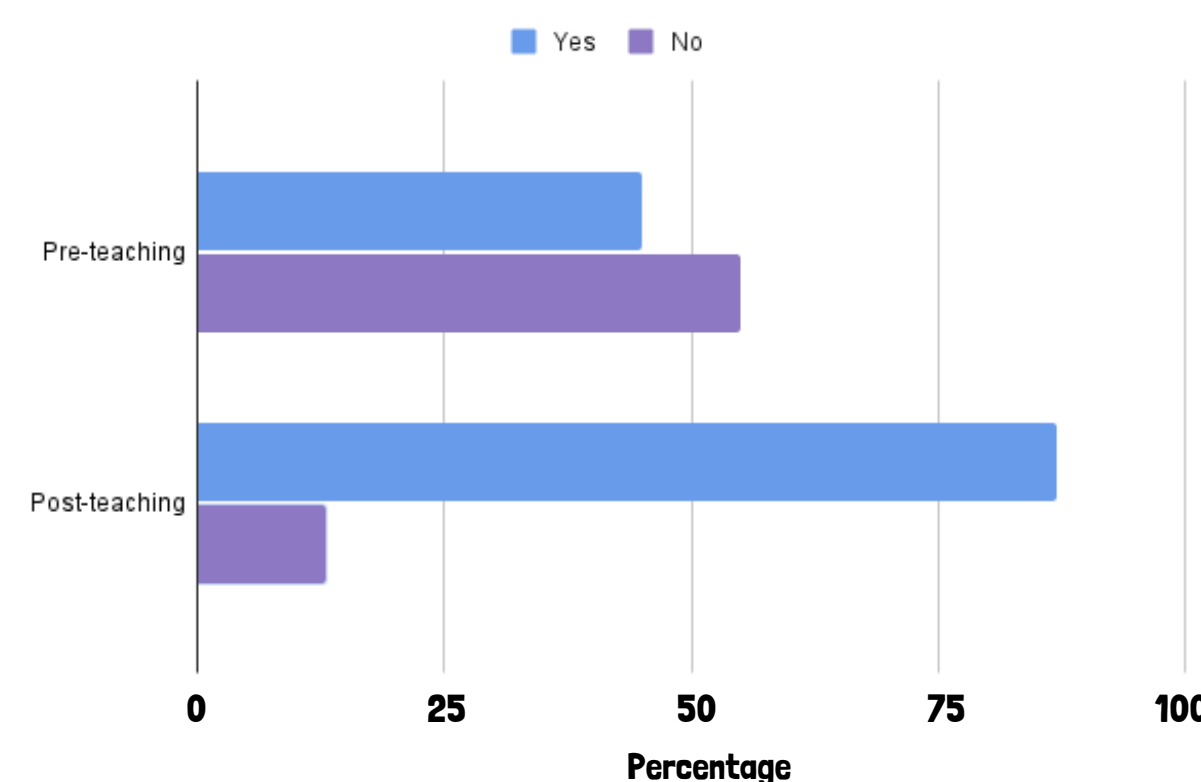
Post-Teaching Survey Results

- 46 of 93 (49%) FDs completed the post- teaching survey.
- 91% reported that they had now received teaching about how to fill in a radiology request effectively.
- 87% of respondents now always knew how to contact radiology in and out of hours.
- The average score for self-reported confidence in requesting appropriate imaging increased to 3.89/5.
- The average score for confidence in CXR interpretation increased to 3.67/5.
- 100% of respondents agreed or strongly agreed that the session was useful, engaging and interactive.
- The majority found the interactive case-based CXR interpretation to be the best aspect of the session.
- Free text answers to 'what could be improved' all related to having more sessions and longer sessions.

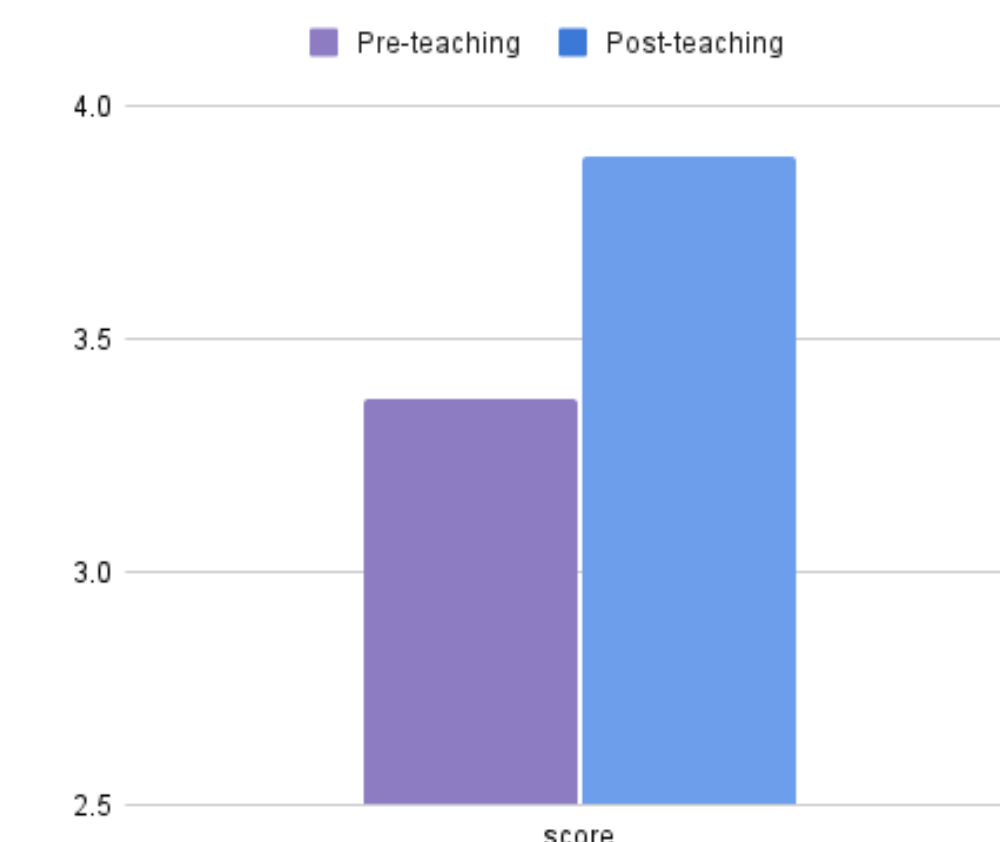
Self reported confidence in CXR interpretation (0-5) pre and post intervention



FDs response to 'I always know how to contact Radiology in and out of hours'



Self reported confidence in requesting appropriate imaging (0-5) pre and post intervention



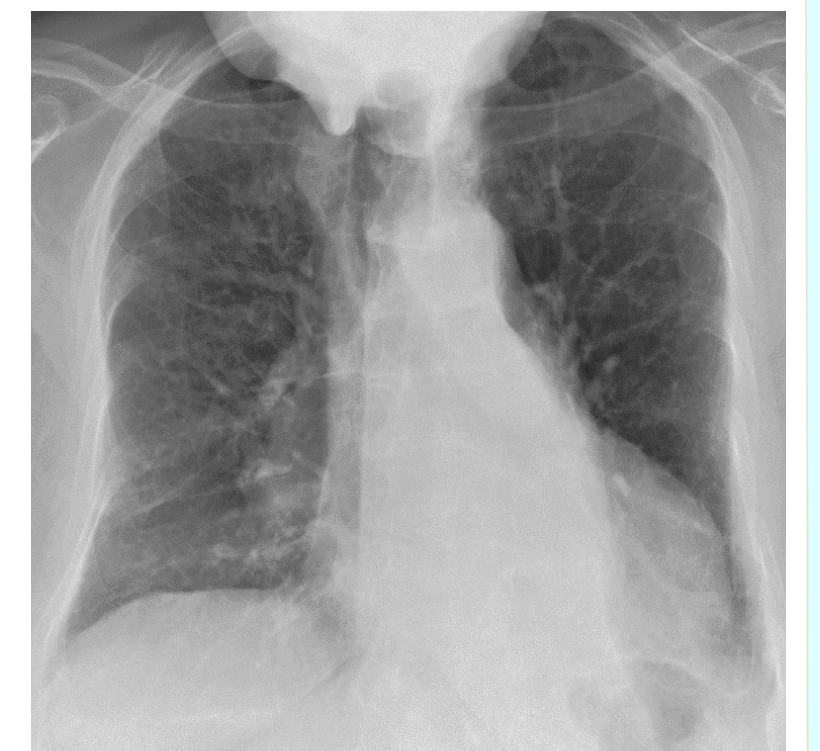
Discussion

- The pre-intervention survey results confirmed an unmet demand for radiology teaching amongst FDs. The survey elicited the FDs' priorities for the teaching intervention, which enabled targeted content design focused on requesting imaging, contacting radiology and case-based CXR teaching.
- Limitations of the project:
 - 1) Modest participation rate of FDs in the pre-teaching survey, and bias therefore cannot be excluded in the subset who responded.
 - 2) Subjective (not objective) assessment of FD knowledge and confidence
- Nonetheless, the significant increases in self-reported knowledge and confidence and the positive feedback in the post- teaching survey demonstrate the effectiveness of the intervention.
- Upskilling FDs in requesting and reviewing imaging investigations will save time and resources, and most importantly improve patient safety.

Action plan

The next steps for this QIP are to further increase radiology teaching for FDs and to refine the teaching based on the feedback, including:

- Delivering an induction session for FDs at the start of the year with a focus on high quality requesting and the logistics of contacting radiology
- Delivering a further longer session during the year with a focus on interactive case-based CXR teaching
- Looking to extend provision of formal radiology teaching to other groups of junior doctors in the trust



CXR from the teaching session showing sail sign indicating left lower lobe collapse

References

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