Problem

- Only 21% of A+E CXR's and 24% of inpatient CXR's are reported the same day by an expert radiology doctor
- This leaves most of the interpretation and subsequent decision to be made by the patient facing clinician such as the emergency or general medicine doctors
- These doctors may also be more junior if out of hours
- These clinicians are making time critical decision on patient management based on their CXR interpretation, which may not be as good as a consultant radiologist

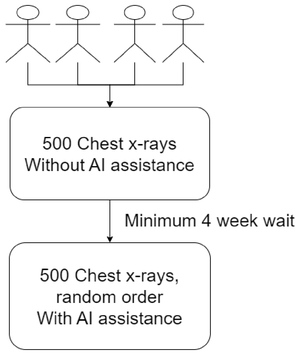
Proposed Solution

- AI assistance may improve performance of these patient facing clinicians CXR interpretation
- There is a lack of evidence in the literature that explores non-radiology clinicians' performance compared against AI and with AI assistance
- A multi-reader multi-case study design was used to explore this further using a commercial AI CXR tool (LUNIT) on 500 inpatient and emergency department CXR's

Study Design

- 30 clinicians recruited to read 500 chest x-rays in 2 phases, without and then with AI assistance
- 500 chest x-rays were from inpatient and emergency department patients
- Case mix included 100 normal chest x-rays and at least 40 of each pathology

Recruitment: 30 Clinicians of different grades and specialities (Radiology, Emergency, General Medicine, Intensive Care, Radiographers)

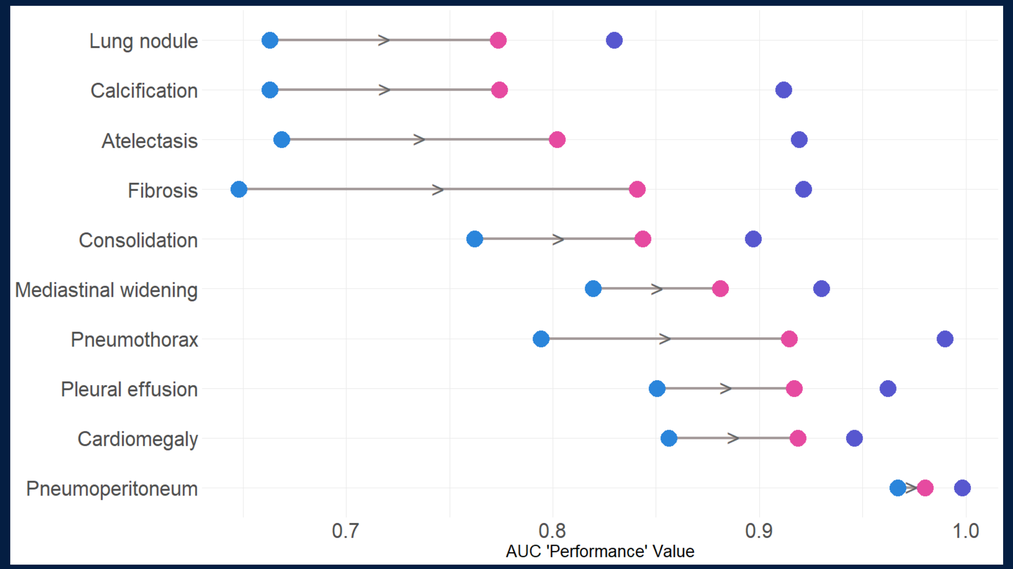


Using AI helps frontline clinicians interpret emergency chest x-rays better...

...But not as well as AI alone

Clinician performance with and without AI, compared with AI

- AUC performance scale is 0 – 1, with 1 being the highest performance



Guy's and St Thomas' NHS Foundation Trust

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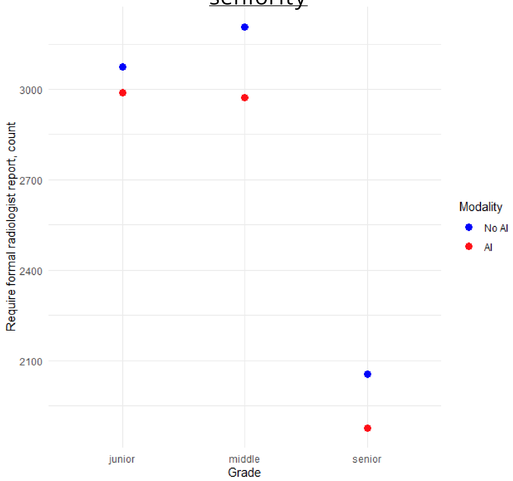
Scan to find out more

Findings

- AI assistance showed a statistically significant improvement in performance for 8 out of the 10 pathologies for readers
- AI assistance reduced the need for further CT imaging and clinician requirement for formal radiologist report ($p < 0.001$ for both)

Further investigation required	Without AI	With AI
Follow up CXR	2516	2482
Ultrasound	587	688
CT	5742	5179

Clinician requirement for formal radiologist report without and with AI assistance stratified by seniority



Conclusion

- AI-assisted CXR interpretation has a measurable impact on clinical decision-making by patient-facing clinicians.
- These findings suggest that AI could play a meaningful role in supporting clinicians in making more efficient decisions, with potential implications for workflow optimisation. Future prospective studies are needed to further explore these benefits in real-world clinical settings.