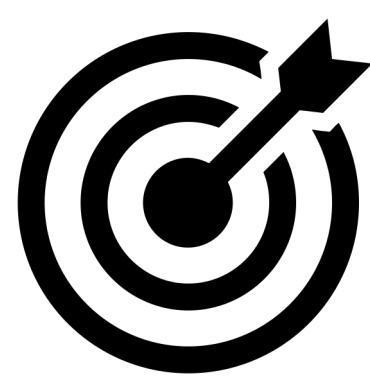


Clinician Perceptions of AI-assisted abdominal ultrasound

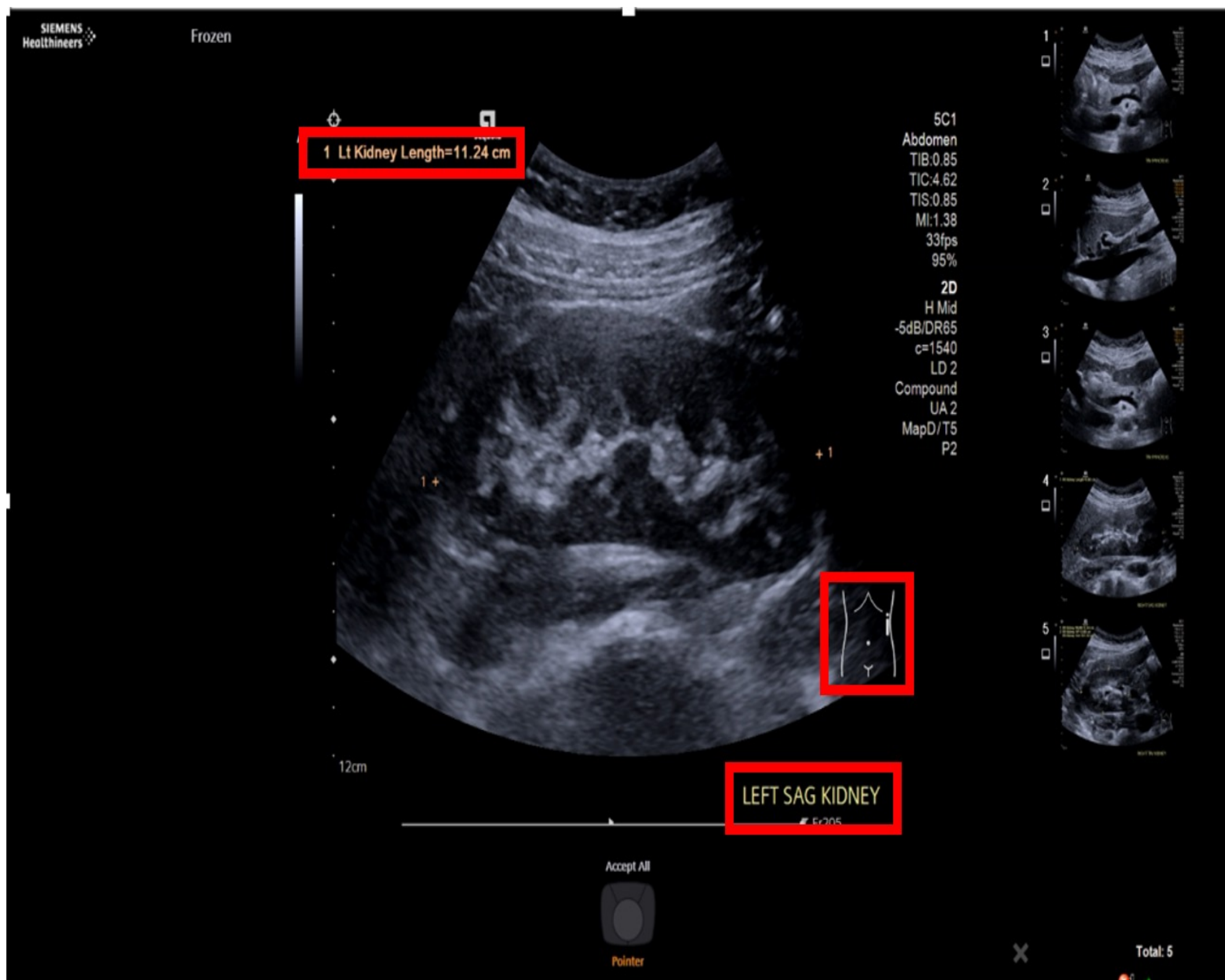
Mak T L A¹, Sajeev A², Lim A¹
¹ Imperial College Hospital NHS Trust ² Imperial College London



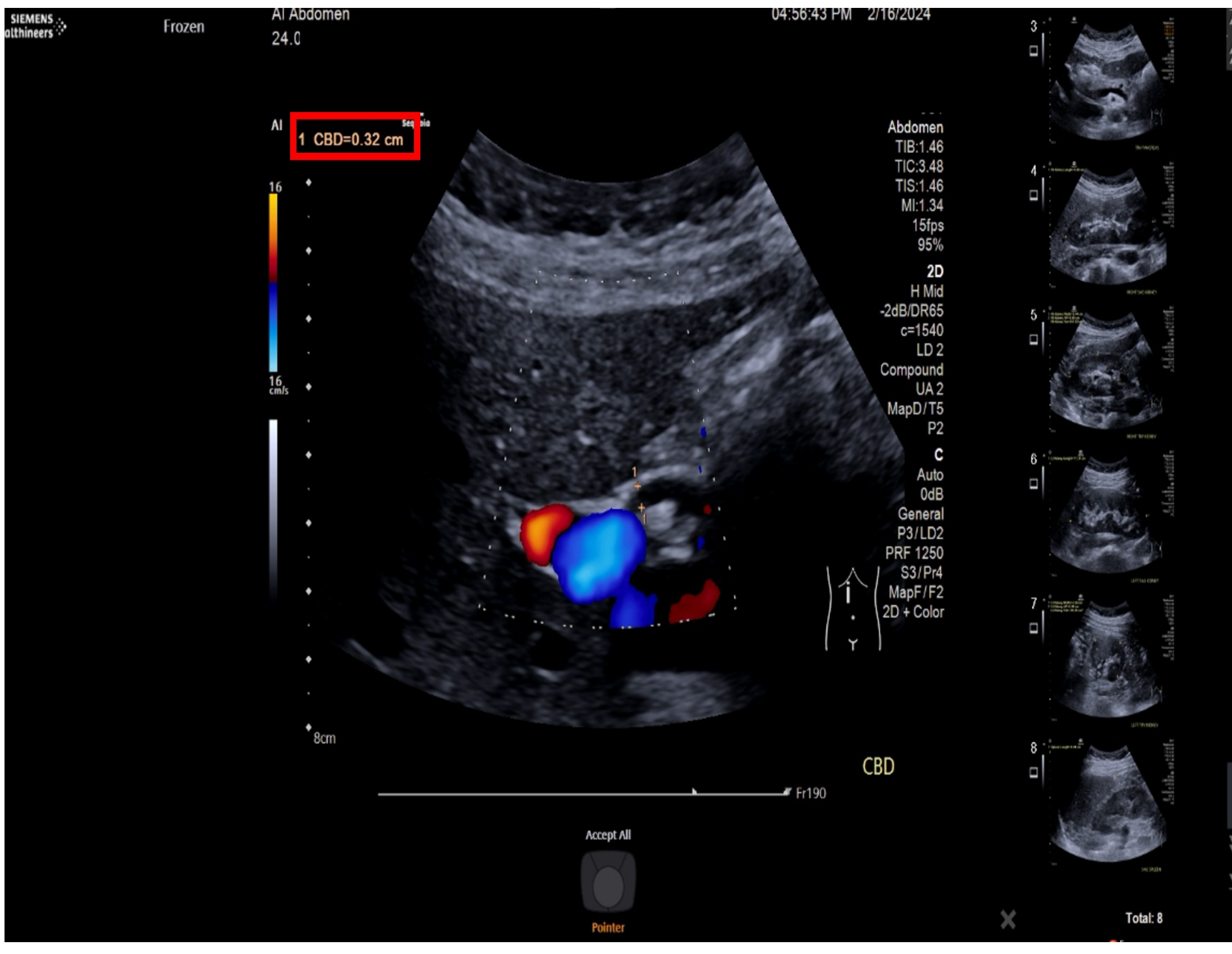
AI assisted ultrasound technologies are developing rapidly, but adaptation into clinical practice is greatly dependent on user acceptance. AI abdomen (Siemens Healthineers, Germany) is a novel application that automates labelling and measurement of abdominal structures.

STUDY AIMS

1. Evaluate performance of AI abdomen in terms of time
2. Collect qualitative feedback of operators of different skills levels



Outputs are automatically populated once structures are identified. The measurement of the left kidney is shown.(see red box.)



The common bile duct detected in the porta hepatitis. The CBD measurement is seen in the top left corner.

METHODS



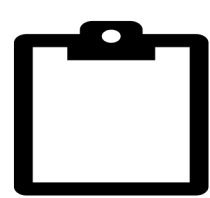
Sonographers, residents and consultant scanned the same volunteer



1st scan:
AI-assisted. Total scan time measured.



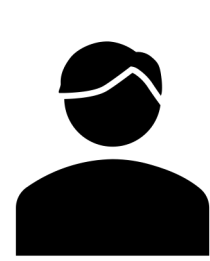
2nd scan:
Convention ultrasound of the abdomen. Total scan time measured.



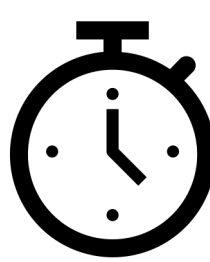
Feedback collected via survey

- Perceived advantages
- Limitations
- Willingness to adopt AI

RESULTS



24 participants:
17 residents, 3 sonographers and 4 consultants



The mean scan time with AI : 221.4±87 seconds.
The mean scan time without AI : 243.5±86 seconds (p= 0.115).



When grouped into experience <5 years and > 5 years. Differences with AI vs without AI

- -30.9s (p=0.002) in juniors
- +13.4s (p=0.57) amongst seniors.

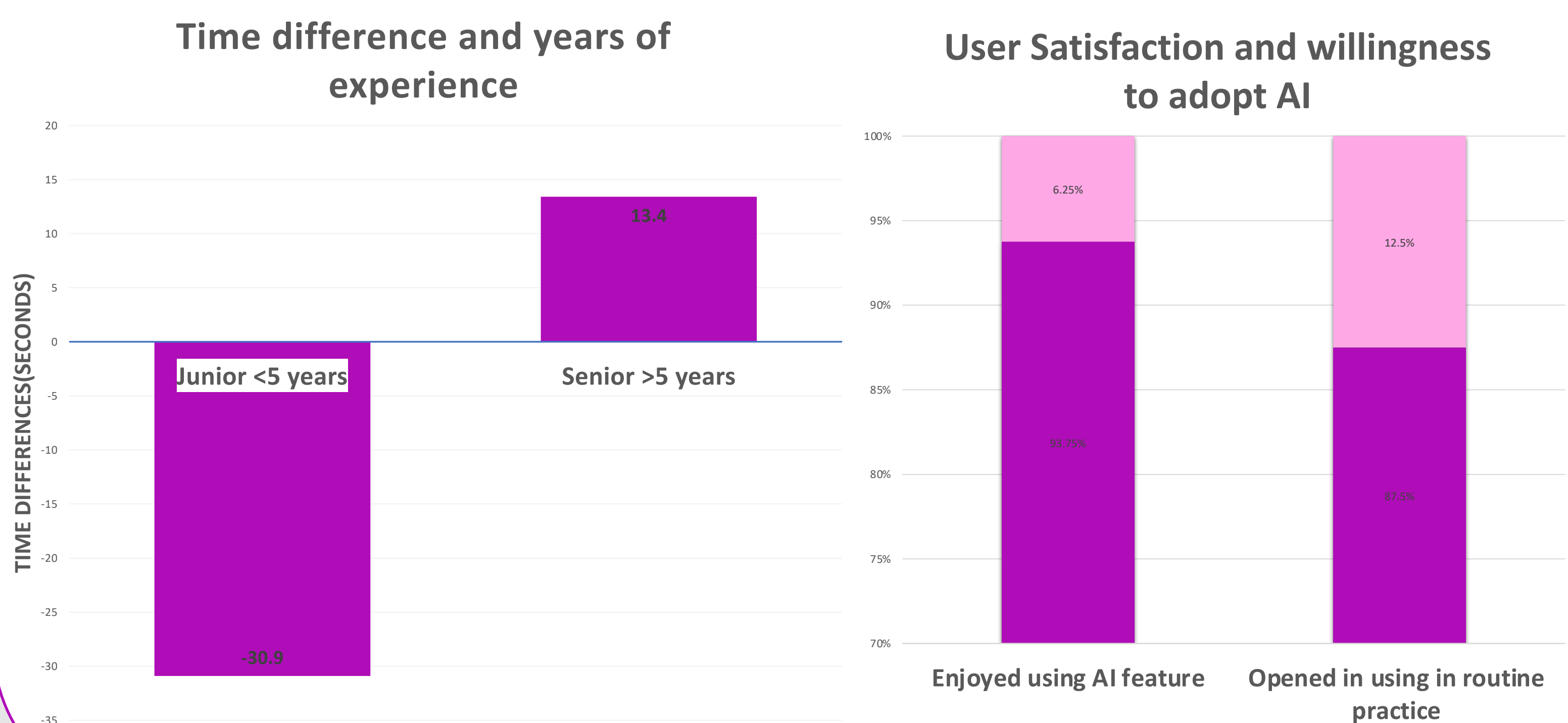


KEY TAKEAWAY POINTS

AI reduces scan time for less experienced practitioners, but made no difference for senior scanners.

The majority enjoyed using the AI feature, and were open to integrating it into daily practice.

QUALITATIVE FEEDBACK



QUANTITATIVE FEEDBACK



Perceived and cited advantages

- Time efficiency



Reported limitations

- Additional time verifying AI labels, disrupting workflow.
- Time needed to adapt to technology.



Experience level insight

- Senior specialist felt slow down, as they need to adapt their technique to fit model.
- More beneficial for junior trainees.

AI is a promising tool- user acceptance and workflow integration are key for successful adoption.