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RADIOLOGY STAFF PERSPECTIVES ON THE USE OF ARTIFICIAL INTELLIGENCE IN MEDICAL IMAGING

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Introduction

This study explores the views of imaging department staff on artificial intelligence (AI) in medical imaging, with a specific focus on **chest radiograph (CXR) reporting**.

This survey was performed in advance of a regional CXR AI tool deployment. We aimed to identify staff priorities and concerns to facilitate successful AI implementation.

Methodology

A voluntary, anonymised online survey was distributed to imaging staff across four UK trusts in advance of a CXR AI tool deployment.

The survey consisted of **38 questions**. It was created by a team consisting of consultant and trainee radiologists, reporting radiographers and digital managers and was based on validated questionnaires in the literature.

The survey was conducted over two months (July-August 2024) and included questions on opinions about using AI tools for imaging, and specifically for CXRs. **Themes covered practical uses, patient experience and addressing priorities for implementation.**

Results

Out of **94 respondents** (56% female), 43 (46%) were radiologists or reporting radiographers, 42 (45%) radiographers and 9 (9%) were other imaging department staff, such as managers and PACS/IT.

Experience levels were varied with approximately a quarter in each of the following cohorts: <5 years, 6-10 years, 11-20 years, and >21 years.

Thirty-eight participants (40.4%) reported CXRs as part of their job.

Most respondents (93.6%) had not had any AI training but were interested in receiving it. Only 30.8% reported feeling confident about using AI in their daily practice.

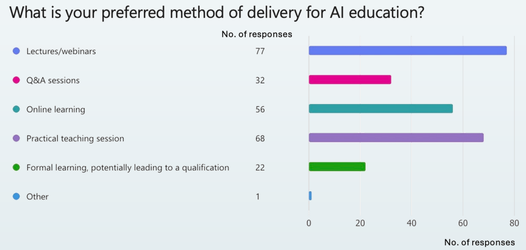


Fig. 1: Graph showing respondents' preferred format to receive AI education (n=94)

Many believed **AI could aid in administrative tasks** (72.3%), **clinical prioritisation** (78.7%), **image interpretation** (76.5%), image optimisation (84.0%), report generation (70.2%), and research administration (79.7%) as shown in Fig. 2.

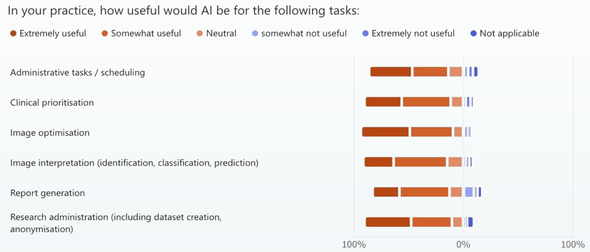


Fig. 2: Graph showing Likert scale responses on the utility of AI for specified tasks (n=94)

Regarding AI for CXR reporting, respondents expected it to **improve reporting efficiency** (80.8%), **reduce workload** (68.1%), and lower **missed diagnosis rates** (67.0%); Fig. 3.

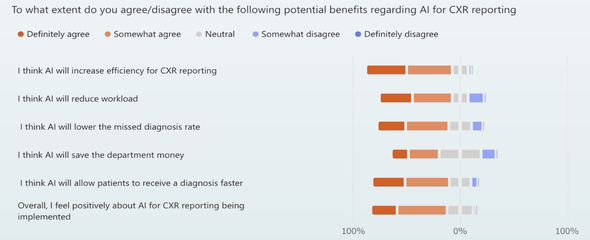


Fig. 3: Graph showing Likert scale responses on the potential benefits of AI (n=94)

Conversely, respondents anticipated AI would **lead to more CT scans** being performed (61.7%) and a potential **reduction in reporters' skills** (60.6%) as shown in Fig. 4.

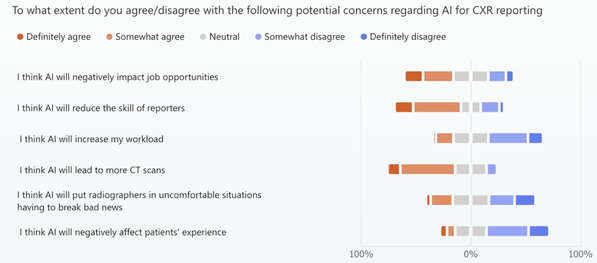


Fig. 4: Graph showing Likert scale responses on the potential drawbacks of AI (n=94)

Interestingly, only 24.4% felt that AI would place radiographers in uncomfortable situations involving delivering bad news.

Most preferred that clinicians (anyone outside radiology) **not see AI-generated images or reports before the official report** was released (55.3% and 60.6%, respectively).

Overall, **71.2%** of respondents viewed the implementation of AI for CXR reporting **positively**. Free-text comments highlighted the need for consistent education and training, user-friendliness, and the use of AI as a supplementary tool rather than a replacement.

Conclusion

Overall, respondents felt positively about the use of AI for CXR reporting and were keen to receive AI related training. Adequate training and ensuring the algorithm is user-friendly were priorities for implementation.

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