

A National Evaluation of UK Radiology Resident Experiences with Artificial Intelligence-Derived Acute Stroke Imaging Software

Introduction

Artificial intelligence (AI)-derived software has been nationally integrated into acute stroke pathways as a diagnostic aid, offering automated interpretation of intracranial non-contrast CT, CT angiography and CT perfusion imaging¹. We aimed to evaluate its prevalence, utilisation pattern and perceived clinical impact among UK radiology residents.

Methods

An anonymous cross-sectional online survey was developed with consultation from the RCR AI Faculty, RCR Clinical Radiology Audit and Quality Improvement Committee, UK Neurointerventional Group and Radiology Academic Network for Trainees, and was nationally distributed from October to December 2025 to UK radiology residents from all deaneries.

Results

154 complete responses were gathered, representing all training stages (ST1 to post-CCT) and a broad geographic distribution throughout England, Scotland and Wales. Of these, 88/154 (57%) were able to report current or previous personal experiences with AI stroke software.

1) Prevalence

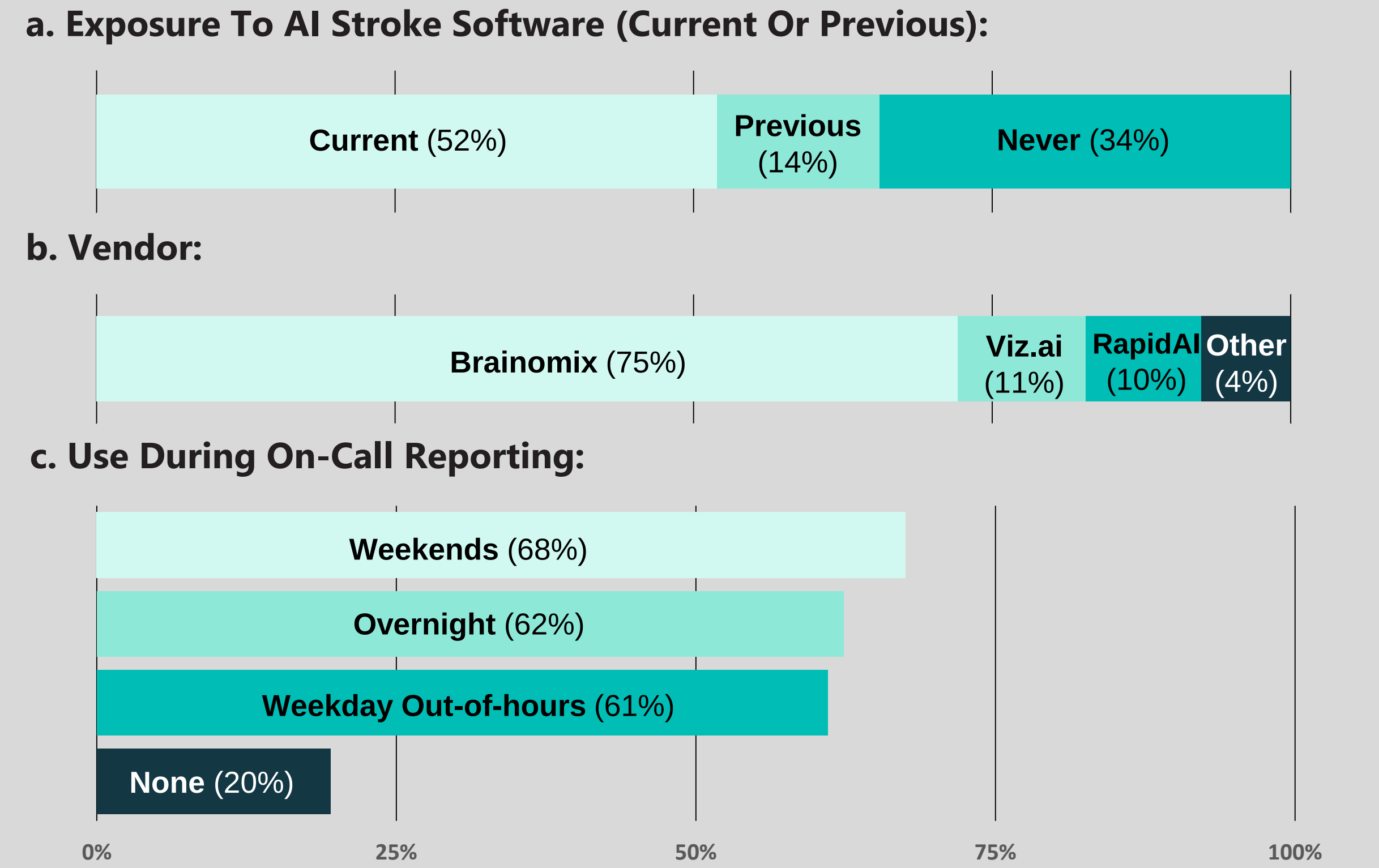


Figure 1: Exposure to (A), vendor (B) and on-call use (C) of AI Stroke Software. Results expressed as proportion of survey respondents (%).

2) Workflow

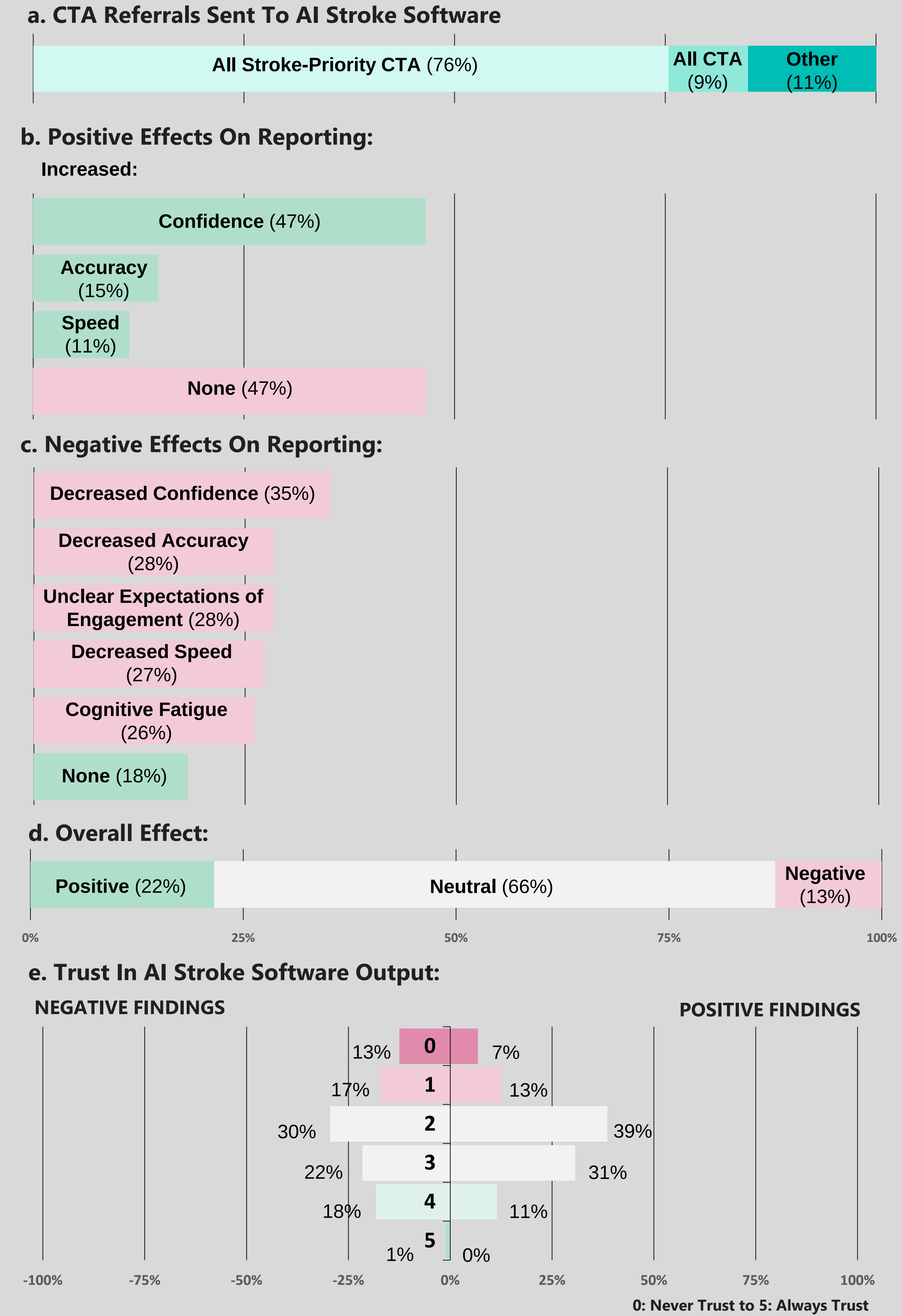


Figure 2: Indications (A), effects on reporting (A, B, C, D) and subjective trust (E) in AI Stroke Software. Results expressed as proportion of survey respondents (%).

3) Safety and Governance

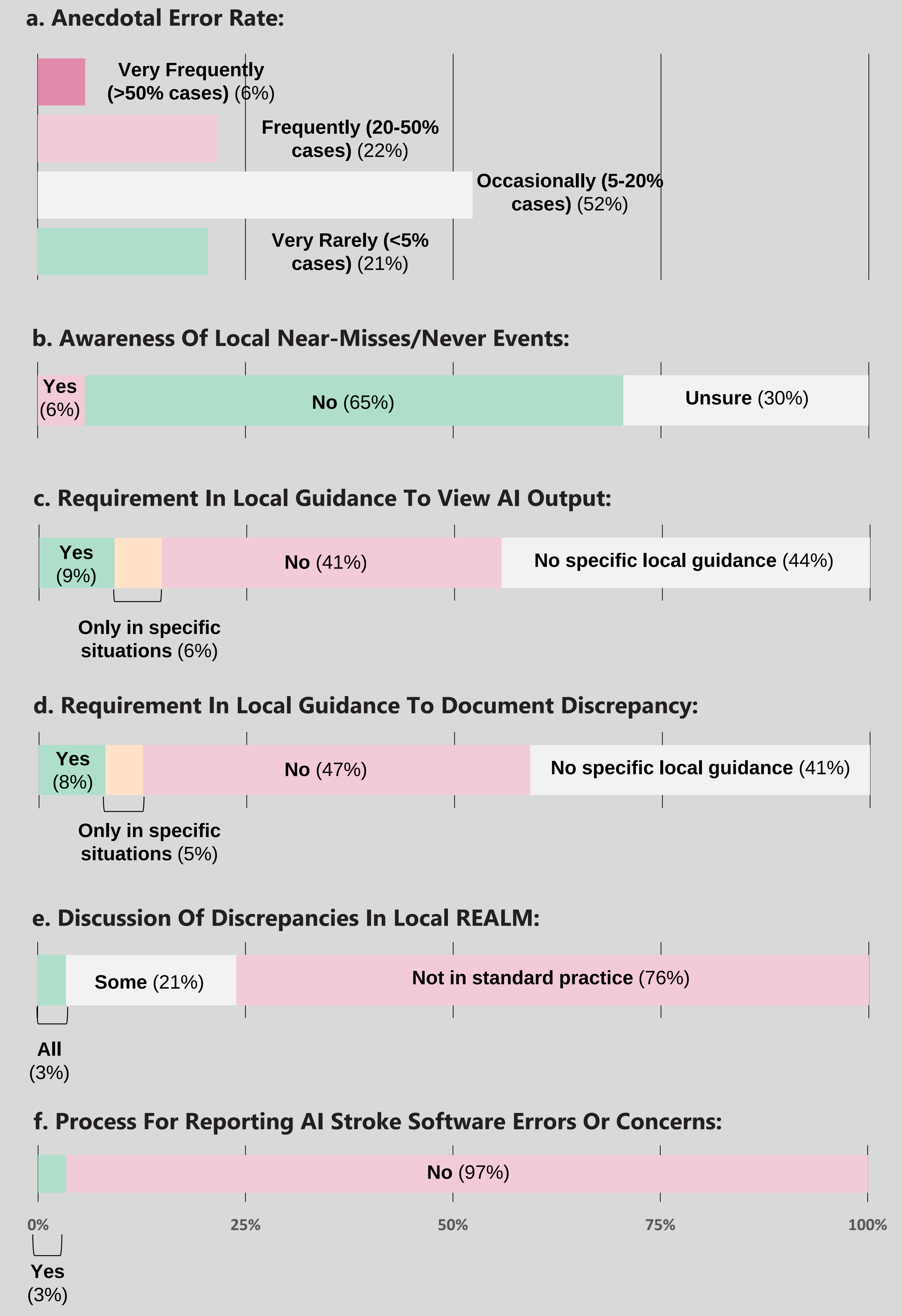


Figure 3: Anecdotal error rate (A) followed by prevalence of specific clinical governance mechanisms as described (B, C, D, E, F). REALM: Radiology Events and Learning Meetings. Results expressed as proportion of survey respondents.

4) Training

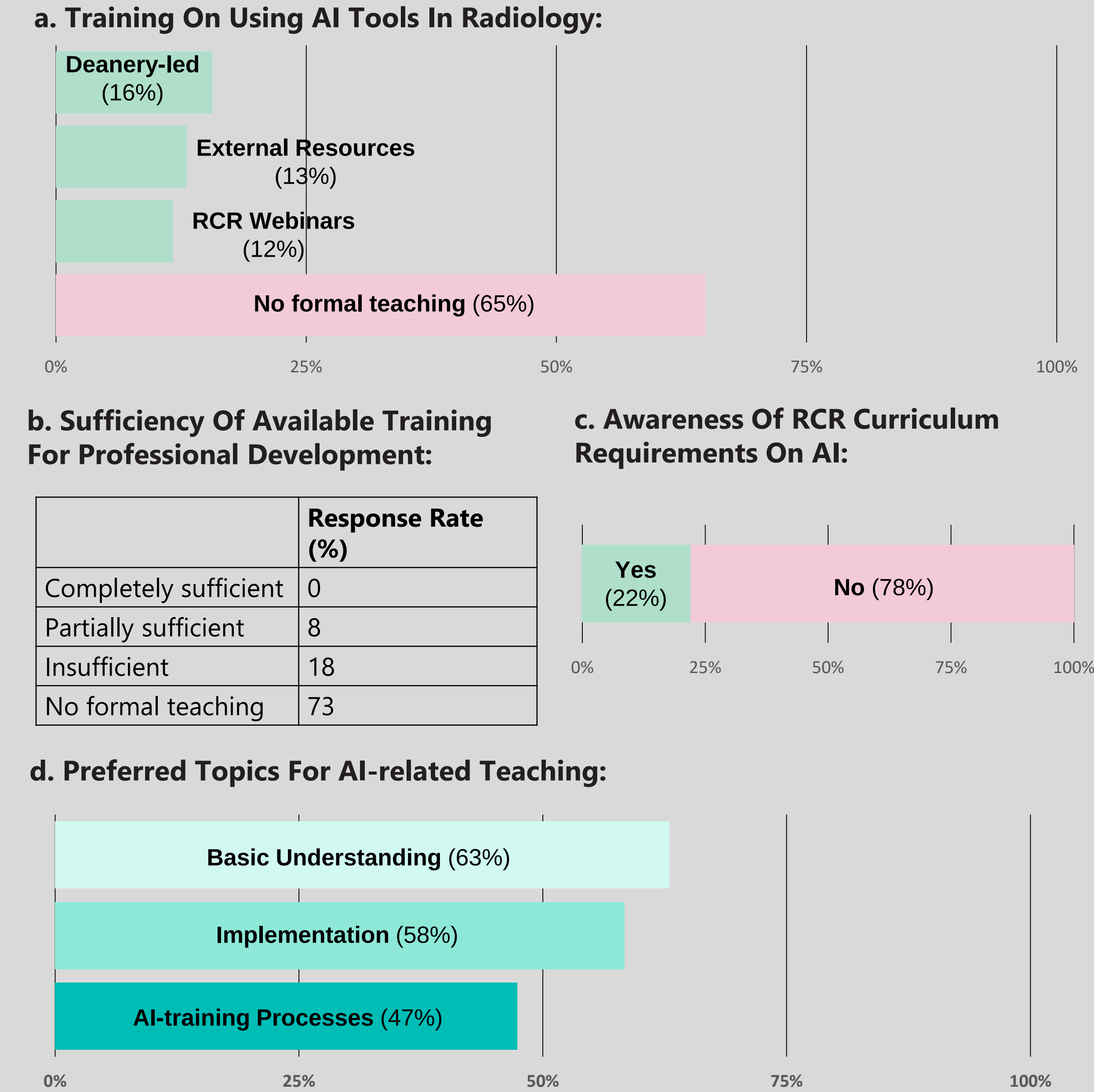


Figure 4: Prevalence (A) and sufficiency (B) of AI-related training, awareness of RCR Curriculum Requirements (C) and most important topics for prioritisation (D). Results expressed as proportion of survey respondents (%).

Conclusion

Among radiology residents, use of AI stroke tools is highly prevalent and often used during out-of-hours reporting. However, residents report inconsistent software performance and workflow benefits, with limited opportunities for discrepancy reporting and feedback.

Consistent integration of AI performance into clinical governance and development of formalised AI education is required to foster radiologists' trust in AI as a reliable diagnostic adjunct.

1: Artificial intelligence (AI)-derived software to help clinical decision making in stroke | Guidance | NICE [Internet]. Nice.org.uk. NICE; 2024. Available from: <https://www.nice.org.uk/guidance/htg708>

