

Clinician Perspectives on BoneView AI for Fracture Detection in the Emergency Department: A Qualitative Evaluation from a Dual-Site District General Hospital

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Purpose

Gleamer BoneView is an AI tool for fracture detection on appendicular trauma radiographs in the emergency setting. Following implementation at two district general hospitals, we evaluated user perceptions, impact on clinical practice, and changes in workflow performance.

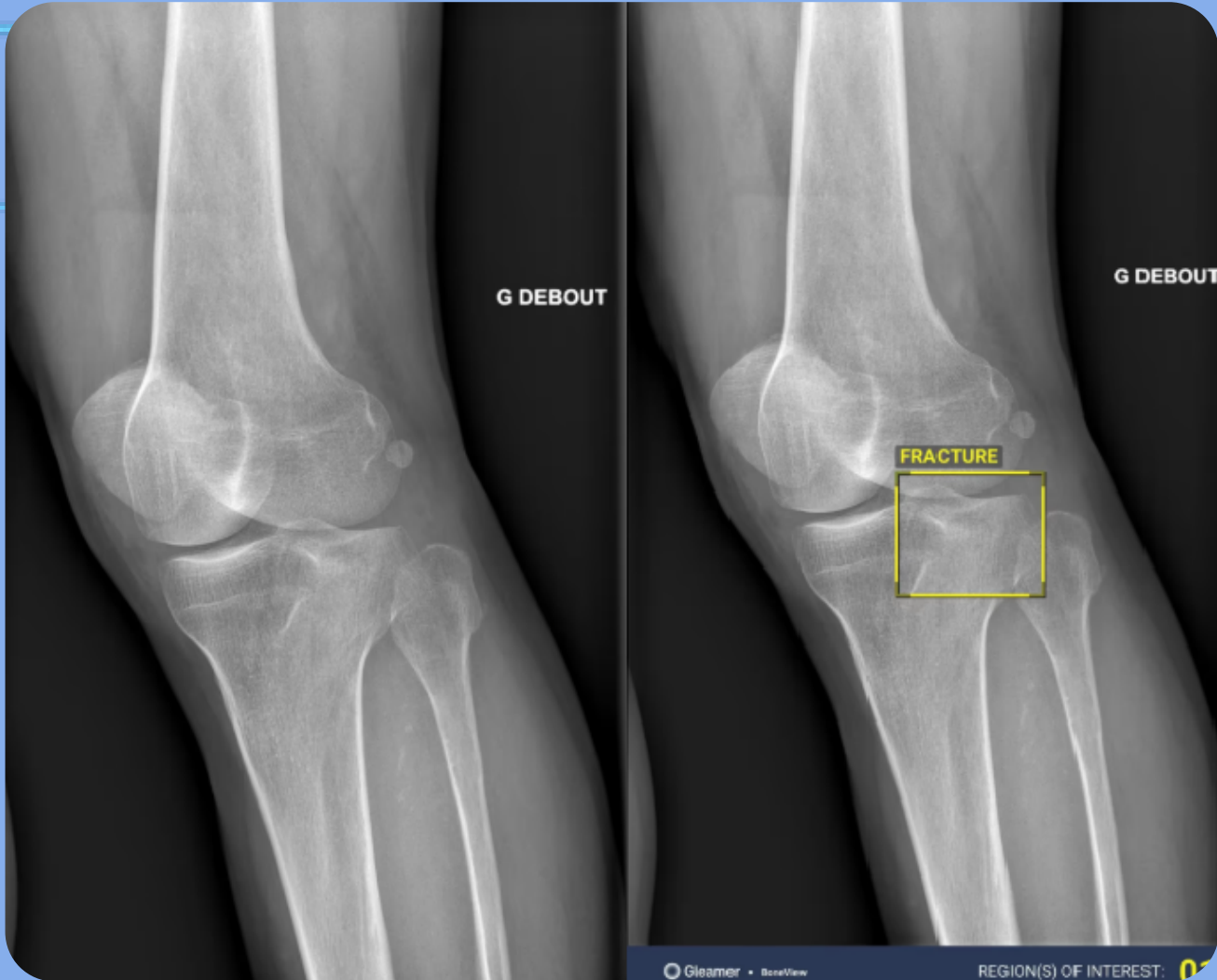


Figure 1 : Bone view interface demonstrating an overlay identifying tibial plateau fracture

Introduction

In the hospital setting, accident & emergency room (A&E) radiographs are often not reviewed by a Radiologist/Reporting Radiographer for 24–48 hrs. This can leave the staff in A&E without an expert review and can lead to changes to the initial findings once the patient has been discharged. Delayed diagnosis can lead to poor outcomes, increased complications for patients and financial implications for the hospital.

We implemented bone view AI in the two A&E's at our trust to reduce errors and increase confidence of staff across multiple professions and specialties. The system has a simple interface, with an overlay on the radiograph as demonstrated in figure 1.

All radiographs are reported formally.

Clinicians support BoneView as an adjunct — not as a standalone reporter.

Methods

A cross-sectional questionnaire was distributed six months post-implementation to an MDT cohort across emergency, orthopaedic, and radiology departments, including consultants, junior doctors, nurses, advanced clinical practitioners (ACP), allied health professionals (AHP) and reporting radiographers. The survey assessed changes in confidence in plain film interpretation, perceived strengths and limitations, impact on reporting efficiency and accuracy, perceived medicolegal responsibility, and effects on clinical decision making. Responses were analysed for key themes and trends.

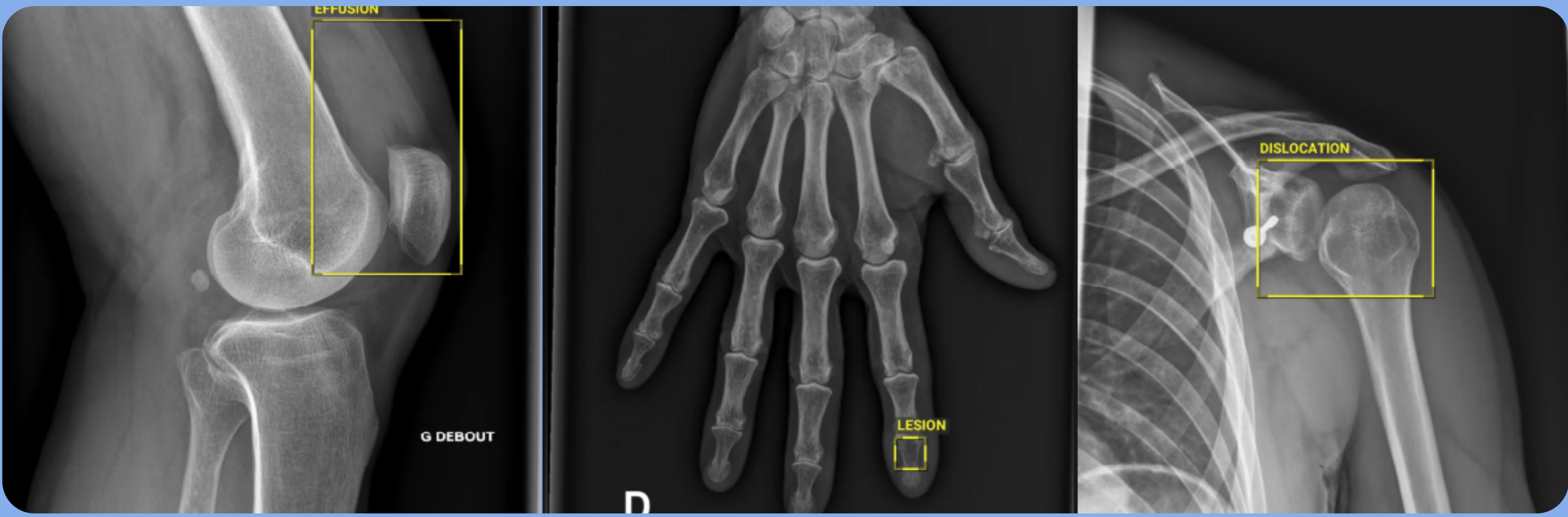
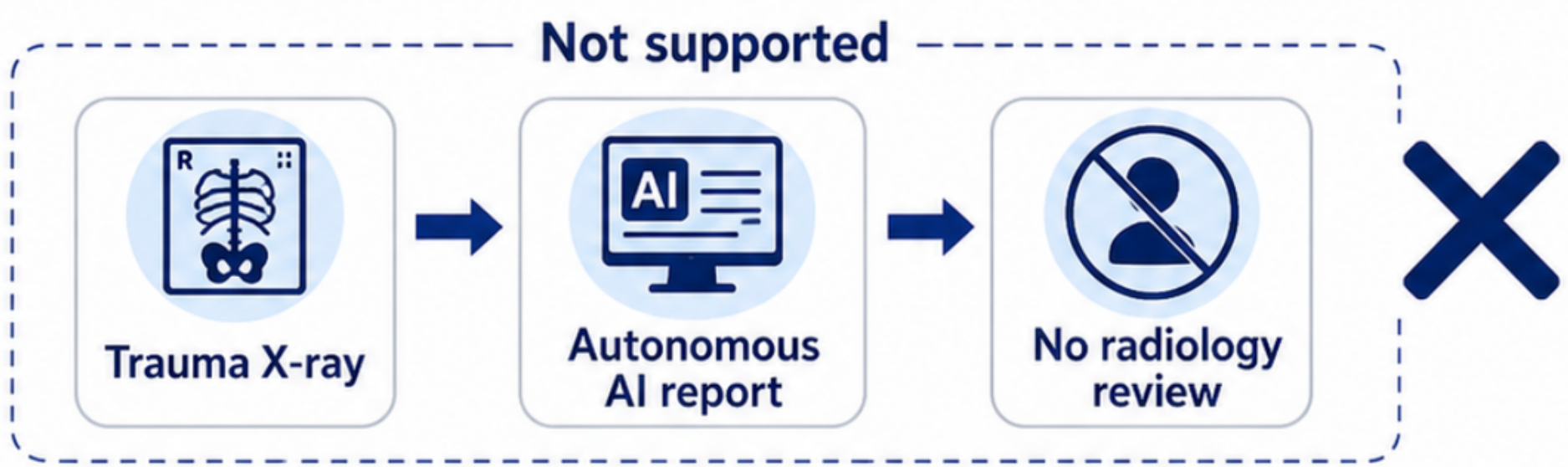


Figure 2: Bone view interface demonstrating detection of effusions, lesions and dislocations

Preferred clinical workflow for BoneView AI

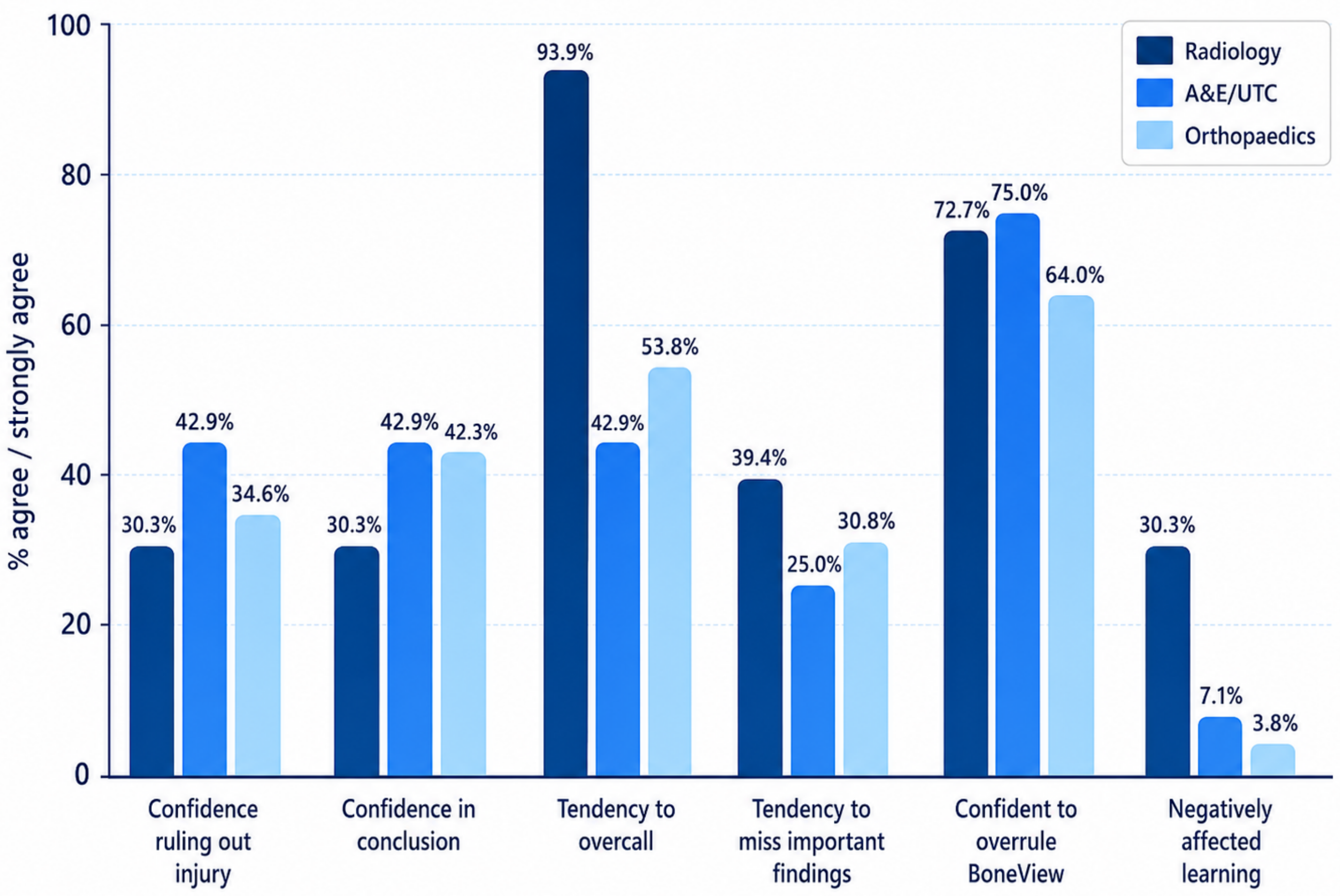


Preferred model: AI as decision support



Use AI to support fracture detection in ED, while retaining clinical judgement and radiology oversight.

Perceived impact and concerns by staff group



Supported

- 69% support AI use with radiology reporting
- 62% support AI use on all trauma X-rays
- BoneView valued as a second reader in ED

Caution

- False positives / overcalling
- Missed subtle or unusual findings
- Risk of over-reliance
- Workflow / PACS burden

Not supported

- Only 1.1% support AI reporting with no radiology review
- 89.7% reject autonomous AI reporting

Results

n= 87 respondents from Radiology (n=33), A&E (n=28) and Orthopaedic (n=26), BoneView was viewed as a helpful second-reader tool for A&E trauma X-rays, but not a replacement for clinical or radiology review. Support for AI use with radiology reporting was similar across groups: Radiology 66.7%, A&E 71.4%, Orthopaedics 69.2%, while support for autonomous AI reporting was almost absent.

Orthopaedic respondents were particularly positive about its ED impact, with 80% agreeing AI will improve patient care and 61.5% identifying confidence/junior support as a key theme.

Their comments suggested BoneView may reduce missed fractures and unnecessary calls to orthopaedics “A&E department benefits a lot from the AI” and “Minimises risk of ED missing fractures”.

However, surgical respondents also highlighted important implementation risks, including missed AI alerts, false positives and over-reliance, noting “glaring false positives”, “can mislead decisions”, and that “positive AI reports” need a clearer alert system to prevent fractures being missed.

Perceived benefits

“A&E department benefits a lot from the AI”

“Minimises risk of ED missing fractures”

Concerns

“Glaring false positives”

“Can mislead decisions”

Conclusion

BoneView demonstrated higher acceptance among clinicians more directly responsible for diagnostic decision-making. The tool also appeared to increase confidence in excluding fractures, suggesting a role in supporting normal reporting.

Differential confidence in challenging AI outputs, particularly among non-reporting groups, raises concern for automation bias and inappropriate reliance. Perceived improvements in efficiency needs to be balanced with overcalling negate these gains and increasing downstream workload.

Overall, these findings indicate that BoneView functions best as a decision-support tool and should not be used autonomously, with a clear need for sustained clinician oversight.