

Trust, Transparency, and Responsibility:

Patient and Clinician Perspectives on The Role of Artificial Intelligence in Healthcare

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INTRODUCTION

AI in Diagnostic Radiology & Emergency Medicine

AI is transforming diagnostic radiology and emergency medicine — applications in fracture detection, chest X-ray interpretation, CT triage, and automated documentation are now in widespread clinical use.

The Patient & Clinician Perspective Gap

Despite rapid deployment, patient and clinician perspectives on AI in radiology remain insufficiently characterised. Transparent governance and medico-legal accountability frameworks are needed before widespread adoption.

Study Aim: To evaluate patient and clinician attitudes toward AI as a clinical decision-support tool in the ED, focusing on diagnostic imaging, oversight, and accountability.

METHODS

Patient Survey (CA2025-106):

1,744 ED patients approached at Beaumont Hospital; 1,368 completed (78% response rate). Survey covered AI familiarity, comfort with AI in clinical tasks including diagnostic imaging, and accountability preferences.

Clinician Survey (CA2025-261):

Two-cycle audit at Beaumont Hospital. Cycle 1 (pre-implementation, n=77): ED, Radiology, and Orthopaedic clinicians surveyed June–August 2025. Cycle 2 (post-implementation, n=51): same groups resurveyed 70 days after RBFracture went live on NIMIS, January 2026 — Ireland's first national AI fracture detection implementation.

Analysis:

Descriptive statistics. Ordinal and multinomial logistic regression for patient survey predictors (Stata/SE 19.5). Multiple imputation by chained equations (MICE) for missing data.

Ethics:

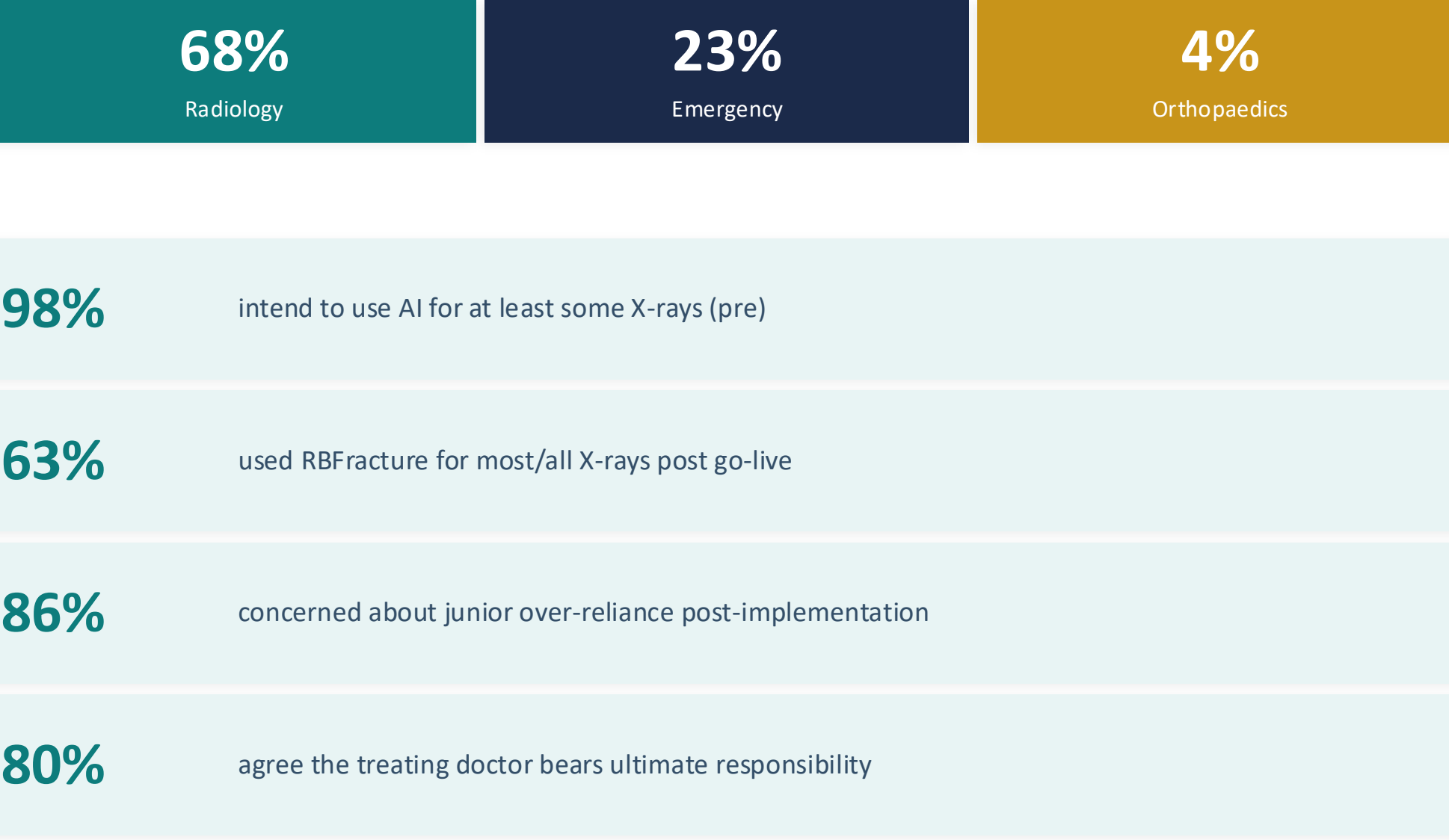
Clinical Audit & Governance Dept, Beaumont Hospital (CA2025-106 & CA2025-261). Conducted in accordance with the Declaration of Helsinki.

DEMOGRAPHICS

PATIENT n=1,325		CLINICIAN n=75	
Sex	F 57.7% M 41.8%	Specialty	Radiology: 68% ED: 23% Ortho: 4%
Age	<50y: 56.3% 50–70y: 32.5% ≥70y: 11.2%	AI Use	Currently use AI: 32%
Ethnicity	White Irish: 77.6% Other: 22.4%	Familiarity	Aware of AI in radiology: 91%
Education	Third-level: 43.4% School: 43.3%	Pre-intent	98% intended to use AI for X-rays
AI Knowledge	Limited/none: 75% Extensive: 25%	Post-use	63% used RBFracture for most X-rays

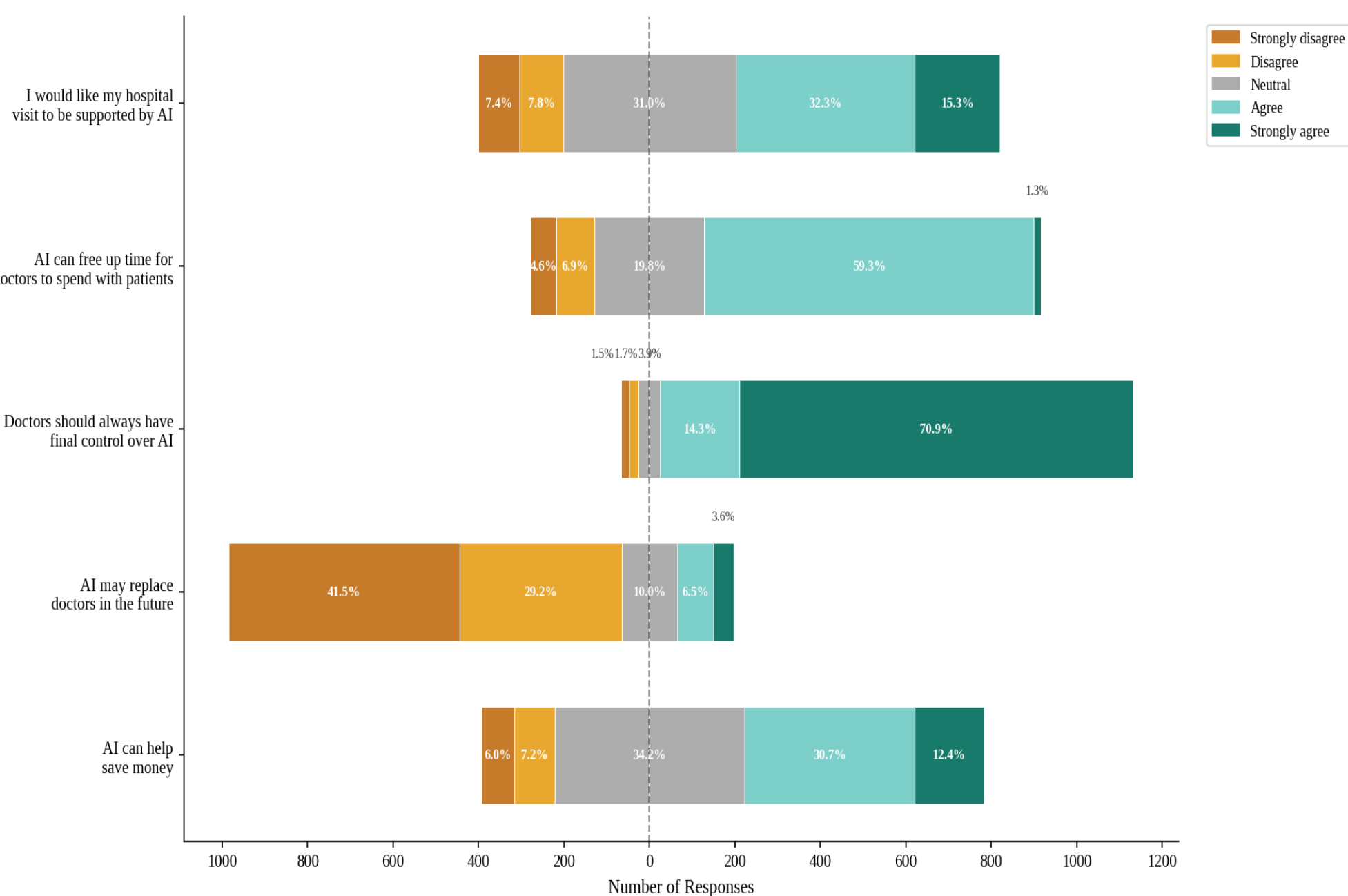
CLINICIAN SURVEY — KEY RESULTS

75 Clinicians Responded



PATIENT RESULTS — AGREEMENT WITH AI IN HEALTHCARE

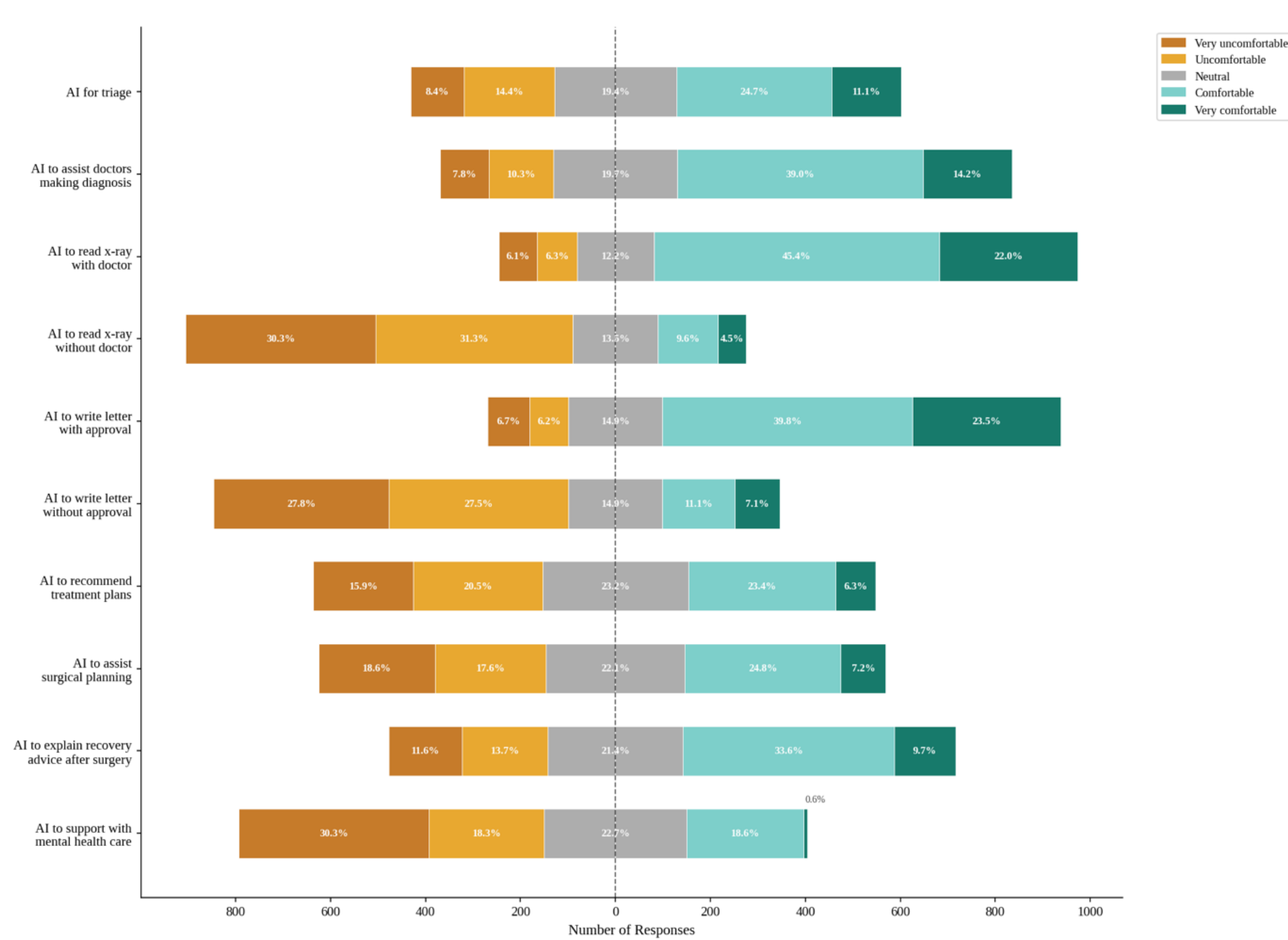
Figure 1. Patient Agreement with Purpose and Use of AI in Healthcare (n=1,325)



67.4% comfortable with AI reading X-rays *with clinician oversight* vs only 14.1% without
85.2% insist doctors retain final control

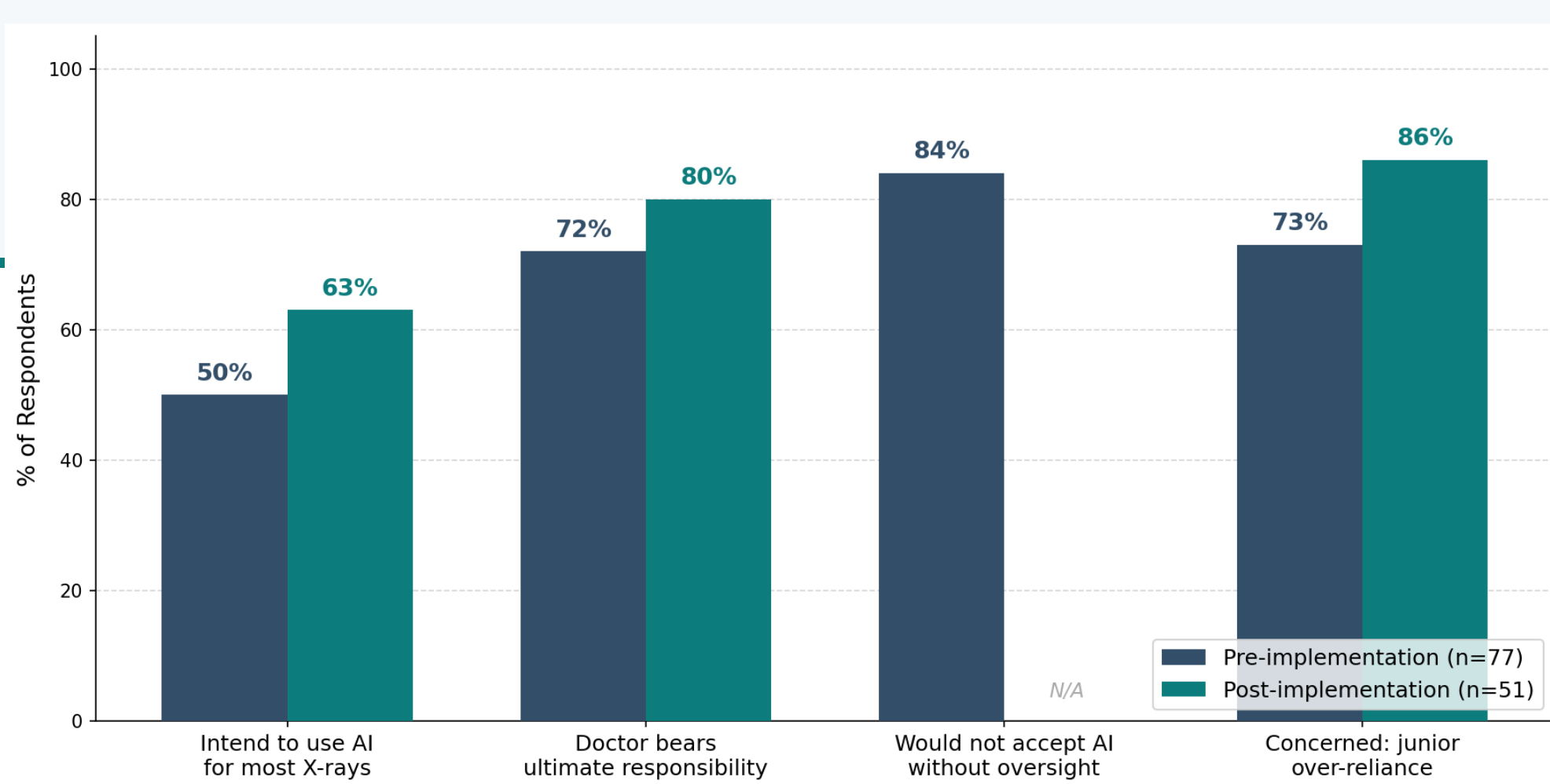
PATIENT COMFORT WITH AI CLINICAL TASKS

Figure 2. Patient Comfort with AI Performing Specific Clinical Tasks (n=1,325)

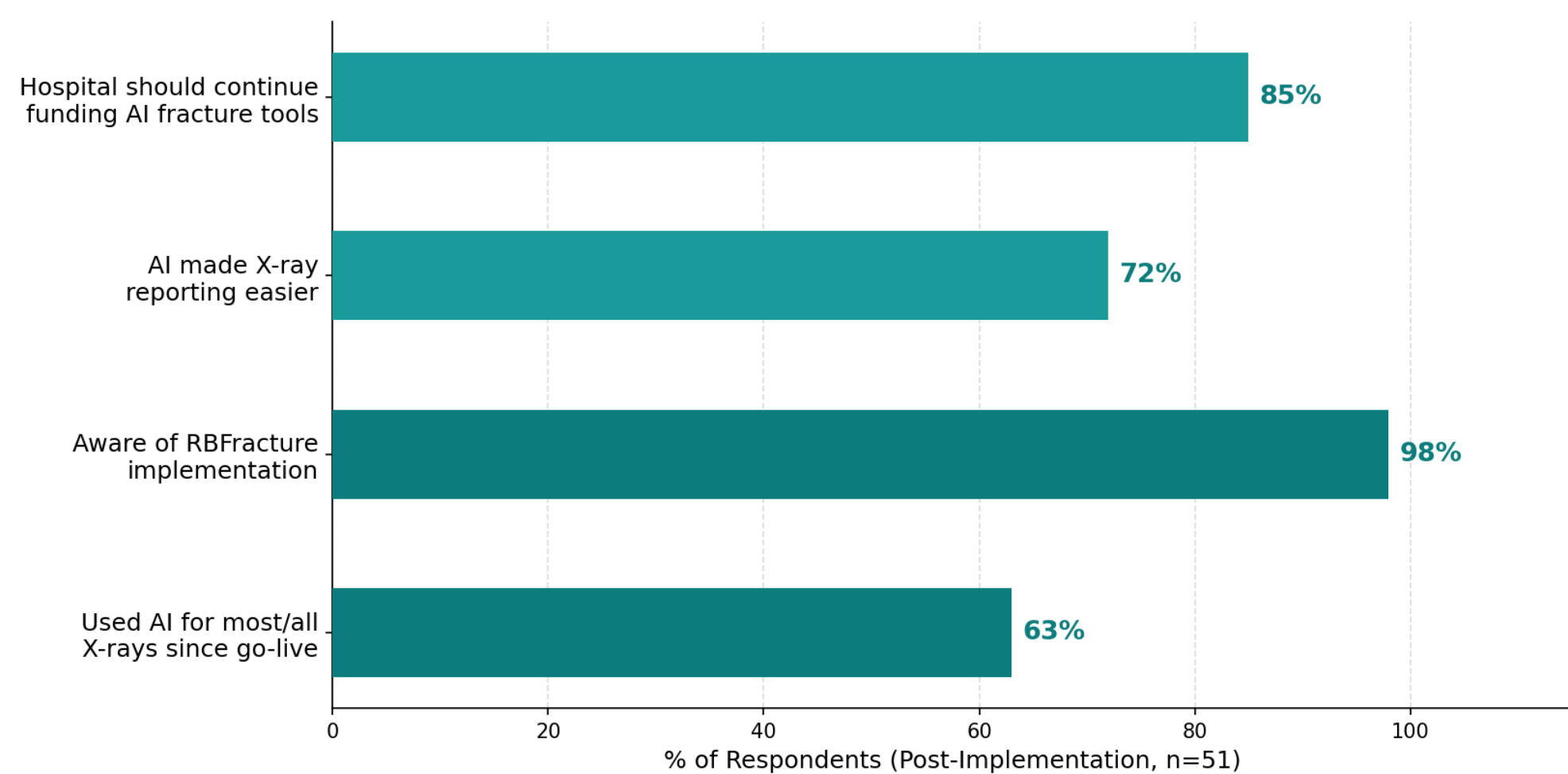


CLINICIAN SURVEY — PRE vs POST IMPLEMENTATION

Figure 4. Key Clinician Attitudes: Pre- vs Post-RBFracture Implementation



POST-IMPLEMENTATION EXPERIENCE (n=51)



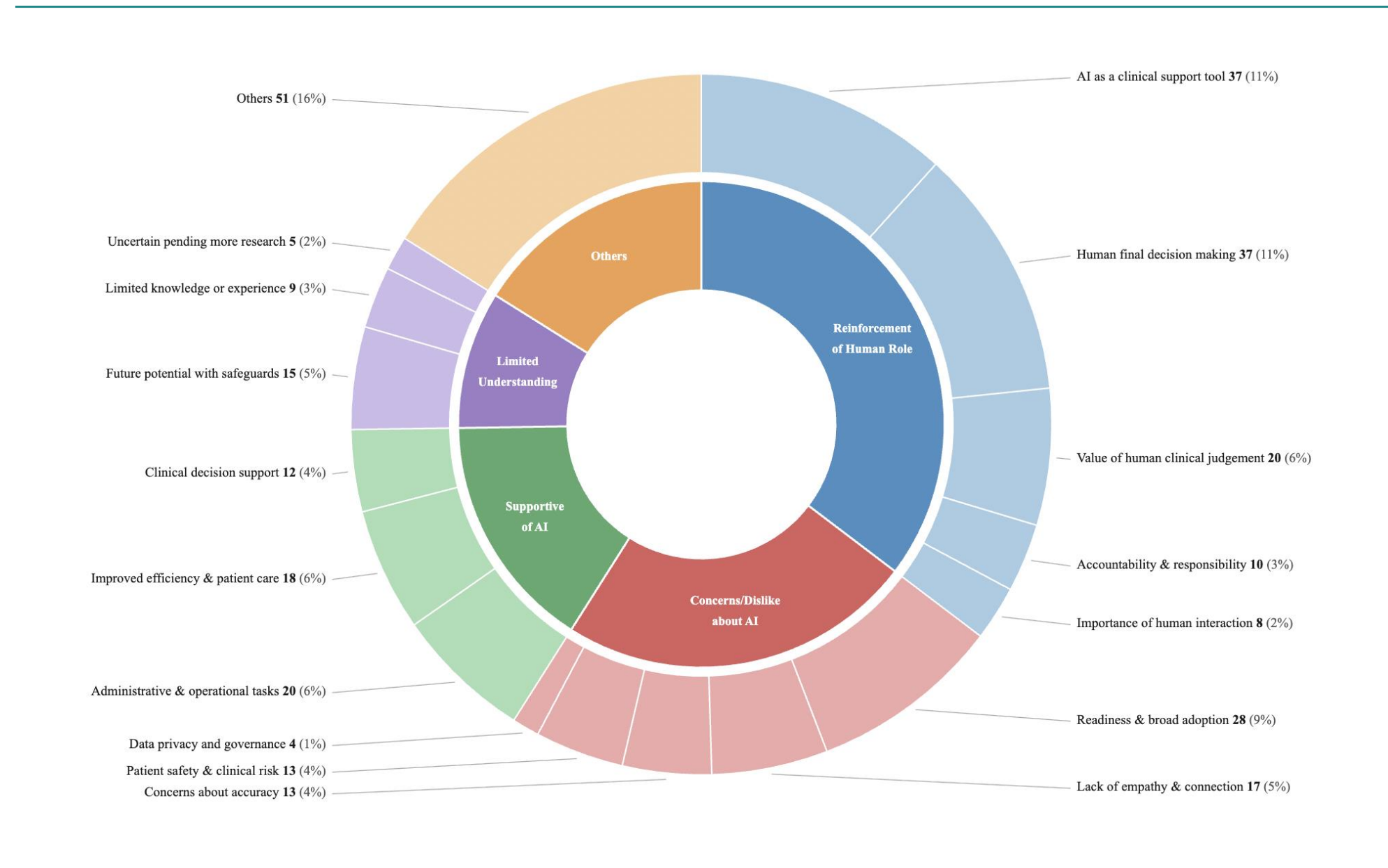
REGRESSION RESULTS — PATIENT SURVEY

Independent predictors of AI acceptance — multivariable logistic regression (n=1,325). All p<0.05.

AI X-ray reading with doctor		
Third-level education	OR 1.33	(1.07–1.64) ↑
Clinician retains final AI control		
Third-level education	OR 2.71	(2.05–3.59) ↑
Non-white Irish ethnicity	OR 0.58	(0.38–0.86) ↓
Hospital visit supported by AI		
Male sex	OR 1.74	(1.41–2.14) ↑
Age 50–70 vs <50 years	OR 1.42	(1.13–1.78) ↑
AI-assisted diagnosis		
Age ≥70 vs <50 years	OR 1.91	(1.34–2.71) ↑
Male sex	OR 1.68	(1.36–2.08) ↑
Third-level education	OR 1.50	(1.21–1.87) ↑
AI for mental health support		
Non-white Irish ethnicity	OR 1.73	(1.23–2.42) ↑

FREE-TEXT THEMES — PATIENT SURVEY

Figure 3. Content Analysis of Patient Free-Text Comments (n=326)



PATIENT VOICES

"Would be a beautiful tool to help decisions but not as final call. Medical professionals should overview all AI work."

"AI can be useful but comes with limitations and cannot replace the experience of a doctor or their case learnings."

"I think it is a useful short-term tool, but most people would prefer a doctor to have a final and overall say."

"AI should in no circumstance be allowed to provide advice or treatment without proofreading by a licensed medical professional."

PATIENT vs CLINICIAN — CONVERGENT FINDINGS

Despite being surveyed independently, patients and clinicians reached near-identical conclusions:

AI Acceptance	67% comfortable with AI X-rays with doctor oversight	98% intended to use AI fracture detection oversight
Oversight	85% insist doctors retain final control	84% reject AI without clinician review
Accountability	49.7% hold the doctor responsible for AI errors	72–80% agree doctor bears ultimate responsibility
Transparency	94% want to know when AI is used in their care	98% awareness of RBFracture post-deployment

CONCLUSIONS

Imaging AI Accepted — With Oversight

67% of patients and 98% of clinicians accept AI for X-ray reporting — but only under clinician supervision. Unsupervised AI was rejected by both cohorts.

Convergent Accountability

Patients (49.7%) and clinicians (72–80%) independently concluded the treating doctor bears ultimate responsibility for AI-assisted decisions.

Over-Reliance: A Growing Concern

Junior staff over-reliance concern rose from 73% to 86% post-implementation — the most striking shift between audit cycles and a key governance priority.

Governance Before Scale-Up

94% of patients demand disclosure; clinician adoption was near-universal within 70 days. Transparent governance, medico-legal clarity, and targeted training are urgently needed.

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