

Establishing clinician-led research priorities for artificial intelligence in dermatology

An international, consensus-based electronic-Delphi (e-Delphi) exercise

Ravi Ramessur¹, Luke Carson, Joseph Scott, Ivy Lee, Emma Lennard, Owain T. Jones, Colin Morton, Veronica Rotemberg, Reiko J. Tanaka, Neil Rajan, Eugene Healy, Emanuele Trucco, Rubeta N. Matin

¹ St John's Institute of Dermatology, School of Basic & Medical Biosciences, Faculty of Life Sciences & Medicine, King's College London, London, UK • Department of Dermatology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

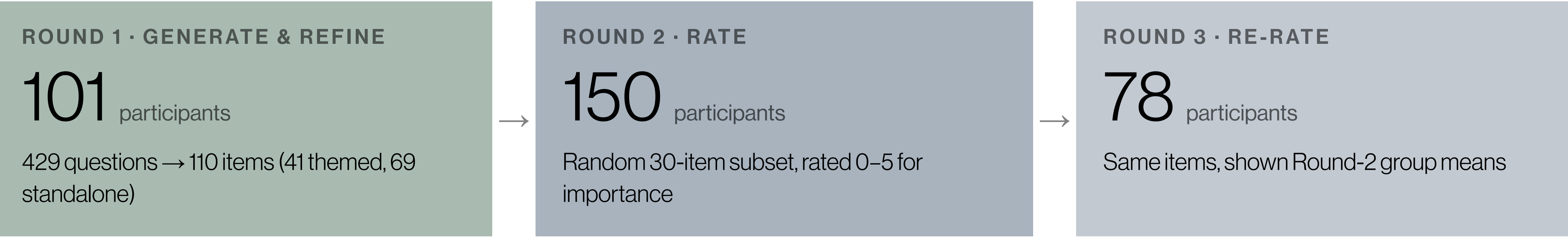
Background & objective

Most AI research in dermatology has focused on image-based skin-cancer diagnostics; broader clinical applications remain underexplored.

It is unclear whether the current research agenda reflects clinicians' real-world priorities.

We ran the first international, consensus-based e-Delphi to identify and rank clinician-derived research questions for AI across the breadth of dermatological practice.

Methods

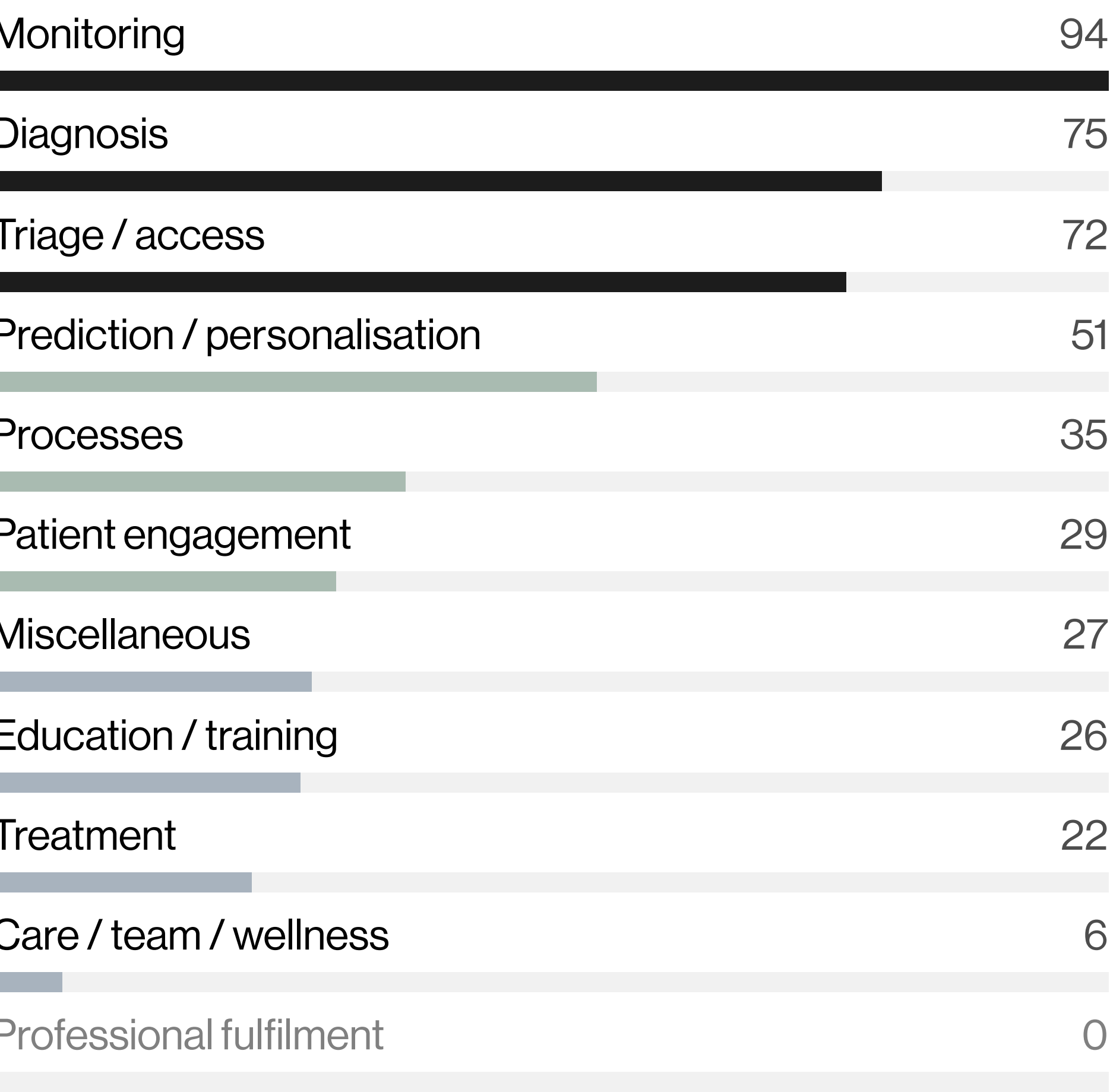


Three-round e-Delphi, May 2022 – Jul 2025, overseen by a 15-member steering group (BAD AI Working Party + AAD). Clinicians invited via BAD, PCDS, RCGP, BDNG, AAD and the Dermatology Nurses' Association.

Analysis — descriptive mean scores across all respondents and by professional role; consensus summarised quantitatively rather than by a fixed threshold.

What clinicians asked about

Submitted questions by domain (Round 1, n = 429)



Top-rated priorities

Highest mean scores, Round 3 (0–5 Likert), all respondents. Six of the top 10 concern skin-lesion / cancer care.

#	RESEARCH QUESTION	MEAN
1	Improve diagnostics when using dermoscopy	4.64
2	Diagnose benign lesions to avoid referral	4.55
3	Improve the diagnosis of skin cancer	4.52
4	Respond efficiently to teledermatology referrals	4.50
5	Monitor moles / lesions in high-risk groups	4.50
6	Reduce dermatologist workload	4.47
7	Improve histological diagnostics	4.43
8	Decision support for primary-care treatment	4.41
9	Improve the diagnosis of skin lesions	4.38
10	Clinical history improves AI Dx vs images alone	4.38

Beyond skin cancer

Excluding lesion / cancer items, priorities shift to operational and equity themes

Efficient teledermatology response	4.50
Reduce dermatologist workload	4.47
Improve histological diagnostics	4.43
Decision support for primary-care treatment	4.41
Cross-team communication / faster letters	4.36

Views differ by role

Consultants weighted service efficiency and medico-legal issues; GPs and nurses weighted access and implementation.

CONSULTANTS' HIGHEST-RATED QUESTIONS	
Communication between teams / faster letters	4.83
Monitor high-risk moles / lesions	4.75
Efficient teledermatology response	4.69

Conclusion

Priorities extend well beyond skin-cancer diagnostics — to triage, workflow efficiency, primary-care decision support and diagnostic equity across skin tones.

Clinicians frame AI as augmentation, not replacement.

These consensus priorities give researchers, funders and policymakers a roadmap to align AI development with genuine clinical need.