BRITISH ASSOCIATION OF DERMATOLOGISTS
HEALTHY SKIN FOR ALL

📞 +44 (0)207 383 0266

📍 Willan House, 4 Fitzroy Square, London, W1T 5HQ

🌐 Website: Website www.bad.org.uk
Patient hub skinhealthinfo.org.uk

The British Association of Dermatologists

Dr MM Chowdhury and Dr C Bower
President and Vice President
Willan House
4 Fitzroy Square
London, W1T 5HQ

6th December 2022

Dear Colleagues,

Re: Artificial intelligence (AI) to tackle 2WW referrals and diagnose skin cancer

The British Association of Dermatologists (BAD) is a charity whose objectives are the practice, teaching, training and research of Dermatology. It works with the Department of Health, NHS England & Improvement, NHS Digital, NHSX, CQC, patient bodies and commissioners across the UK, advising on best practice and the provision of Dermatology services across all service settings.

As such, we are aware of the 2-week wait service pressures faced by many departments through direct contact with our consultant members and patients. Increasingly there are clinical concerns being raised by our consultants regarding pressure by management to use AI skin cancer diagnostic apps to reduce 2WW skin cancer referrals.

At present, **there is currently no published and independently verified evidence to support the safe and effective use of an AI tool in the skin cancer diagnostic pathway in the NHS.** Having sighted the varying information being provided to our clinicians in primary and secondary care, we are writing to you to formally clarify the present role of AI's use in skin cancer.

Our rationale for this is detailed below.

1. The accuracy of AI algorithms intended to support skin cancer diagnoses have been overestimated, with studies conducted in settings that do not reflect the full breadth and depth of clinical practice or the required exposure to over 2000 types of skin disease. This introduces significant bias and risks missing serious but rare diagnoses of skin cancer which can lead to patient harm. Furthermore, the limited classification of skin lesions by an AI technology into either low or high-risk lesions does not significantly reduce the number of referrals from primary to secondary care.

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2. Using AI in primary care does not reduce the need for a Consultant Dermatologist to confirm that the low risk (benign) classification is correct. Onward referral of high-risk lesions will include a significant number of pre-cancerous and non-malignant skin cancers. Using nationally recognised teledermatology 2WW models would have triaged these patients the first time to the correct pathway or discharged care back to their GP. These models are in the best interest of clinicians and patients.

3. In secondary care it is a legal requirement for patients referred on a 2WW pathway to be seen (virtually or face to face within Cancer Waiting Times (CWT) guidelines) by a consultant (or member of their team) who are all core members of the local hospital skin cancer multidisciplinary team (LSMDT) and/or specialist skin cancer multidisciplinary team (SSMDT). There is no legal remit for AI to be used independently (i.e., outside of this pathway) to triage or diagnose a 2WW referral. If AI is used within this pathway, it increases costs as duplicate images are required to be taken by the medical photographer for the patient record and separately for the AI App commercial company. We are aware that the University Hospital Birmingham (UHB) AI model is being used as an exemplar for use of AI, below is a quote provided from the consultants at UHB to put this into perspective.

"University Hospitals Birmingham (UHB) have been using AI in the 2WW pathway since April 2020. The clinicians recognise the potential of AI and are keen to continue to work towards developing this in the future. UHB are currently auditing their pathway in order to assess whether AI leads to a reduction in 2ww referrals, cost or clinical time. At present the AI software is being further evaluated and developed and is not yet being used as an independent diagnostic tool."

4. The BAD has commissioned a report from the [University of York on health economic](#) and the cost-effectiveness of the AI tool across the entire patient pathway. The outcomes of these examples show the potential for additional costs to be incurred for both primary and secondary services due to an increase in 2WW referrals.

5. We have also reviewed the 2WW published data for hospitals that have been using AI skin cancer apps or have had this commissioned in their primary care skin cancer pathway. These figures show above average yearly incremental increases in 2WW referrals without significant reductions in inappropriate lesion case mix. The tables are provided in the accompanying appendix.

The BAD believes that in the future AI will have the potential to improve clinical care in dermatology within an appropriately regulated and governed use. As you are aware, patient pathways in dermatology are complex and to evaluate AI interventions requires clinically led robustly designed

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research studies. As current technologies cannot address the unmet need of increasing 2WW referrals, **we recommend significant local investment in teledermatology services to provide immediate and sustainable results to meet the needs of local patients.** More information about this can be found in the NHS demand and capacity management section of our website.

If you have any questions or queries, or would like to discuss this in further detail, please do not hesitate to contact the Tania von Hospenthal, Clinical Director of the Transformation and Quality Improvement Unit at serviceimprovement@bad.org.uk.

Sincerely,

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Appendix

Table 1: Primary Care AI App users - impact on 2WW referrals to hospital

ODS	ORGANISATION NAME	Region	Catchment Population	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
				TOTAL TREATED	TOTAL TREATED	TOTAL TREATED	TOTAL TREATED	TOTAL TREATED
RAJ	MID AND SOUTH ESSEX NHS FOUNDATION	East of England	1,200,000	9,900*	12,322*	13,876*	11,446	16,359
RGT	CAMBRIDGE UNIVERSITY HOSPITALS NHS	East of England	1,000,000	4,419	4,986	5,518	4,621	6,507
RGN	NORTH WEST ANGLIA NHS FOUNDATION	East of England	750,000	3,460	3,842	4,057	3,602	4,985

*Combined figures to reflect Trust merger in Jan 2018 (RAJ+RDD)

Table 2: Secondary Care AI app users' - impact on 2WW Referrals

ODS	ORGANISATION NAME	Region	Catchment Population	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
				TOTAL TREATED	TOTAL TREATED	TOTAL TREATED	TOTAL TREATED	TOTAL TREATED
RQM	CHELSEA AND WESTMINSTER HOSPITAL	London	1,500,000	3,860	3,932	4,120	4,397	6,276
RRK	UNIVERSITY HOSPITALS BIRMINGHAM NHS	Midlands	1,000,000	2,931	8,875	9,781	7,711	11,369