



Skin Analytics

Early intervention and diagnosis

App empowering people to monitor their skin for early signs of skin cancer.

What is the NHS Innovation Accelerator (NIA)?

- An award-winning national accelerator supporting committed individuals ('Fellows') to scale high-impact, evidence-based innovations across the NHS and wider healthcare system
- An NHS England initiative delivered in partnership with England's 15 Academic Health Science Networks (AHSNs) and hosted at UCLPartners
- Launched in 2015 to support the delivery of the Five Year Forward View, the NIA is highlighted in the NHS Long Term Plan, published in January 2019



Neil Daly, Skin Analytics CEO



neil@skinanalytics.co.uk



+447748673187



Skin-Analytics.com

What is it?

Skin Analytics enables dermatologist-quality screening of skin cancer in Primary Care within appointment times and without the need for expensive equipment. Skin Analytics' solution supports:

1. More accurate identification of melanoma, leading to better health outcomes and reduced treatment cost
2. Less onward referrals to secondary care, reducing strain on specialist clinics and lowering the costs of finding melanoma

GP practices are provided with a dermascope and image capture device. This can be used during a consultation to capture an image of any pigmented lesions a GP would select for referral. An artificial intelligence algorithm then identifies suspected melanoma, common types of nonmelanoma skin cancer and benign (noncancerous) lesions. Leveraging the power of AI means that Skin Analytics can improve a patient's ability to access skin cancer assessments and reduce costs to the health system by acting as a filter to specialist care.

What's the problem?

- Globally, one in five will develop skin cancer in their lifetime. Incidence rates of skin cancer are expected to continue to rise by 7% every year due to the ageing population and increasing exposure to UV light.
- Currently, there are 150,000 new cases and 3,600 deaths in the UK every year.
- The NHS has a shortage of dermatologists, with 1 dermatologist per 124,000 UK citizens, whereas best practice is a ratio of 1 per 62,500 ([Eedy, 2015](#)).
- For melanoma, the most aggressive type of skin cancer, prognosis is highly dependent on the stage of diagnosis; 5-year survival from stage-I is 98% however falls to 23% in stage IV, meaning early diagnosis and intervention is crucial.
- The existing skin cancer pathway is under pressure to cope with these rising rates. GPs indicate that they don't receive sufficient training to recognise skin cancer, making them more inclined to simply refer to a dermatologist when in doubt.
- 70% of visits to the GP for suspicious skin spots are unnecessary and diagnostic accuracy is low at 43% sensitivity ([Koelink et al., 2014](#)). This results in a high proportion of unnecessary costly referrals to dermatologists in secondary healthcare.

What's the evidence?

- GPs operate with a sensitivity of 60% and specificity of 72% respectively when assessing melanoma. Dermascopy- trained GPs increase this to 75% and 78% respectively. ([NICE, 2015](#)).
- Skin Analytics solution operates at >95% sensitivity and >70% specificity comparing well to dermatologists at 88% and 90%.
- Trials of Skin Analytics demonstrated a reduction of onward referrals by around 50%.
- An NHS study conducted in Bristol in 2011, found that reducing the onward referrals around this level can save £43,000 per 100,000 population.
- A prospective clinical study has been conducted in 7 NHS trusts and is awaiting publication.
- An observational study is currently being conducted comparing the AI solution to a meta-analysis of GPs and specialists using 15,000 lesions that were confirmed to be cancerous by biopsy.

Regulation

- Skin Analytics is compliant with the NHS IT safety standards in accordance with EN ISO14971 and [DCB0129](#).
- Appropriate regulatory clearance and information governance requirements have been met with Skin Analytics obtaining a Class-1 CE mark.

How can I adopt Skin Analytics?

Three models are proposed for Skin Analytics:

- At the point of primary care
- Within community dermatology clinics
- During triage within Trusts

A monthly access fee and a per case fee is charged, which is funded from savings from onward referrals.

Skin Analytics is undergoing discussions with a number of CCGs and NHS Trusts to determine the most appropriate model for adoption across the NHS. Due to the flexibility of the AI solution, the service model can be easily adapted to CCG's specific requirements and local dermatology challenges.

Deployment and set up takes 4-8 weeks depending on the requirements of the partner organisation. All hardware and training is provided by Skin Analytics, along with ongoing technical support and maintenance.

For more pricing information, to set up a meeting and to move forward with adoption, please contact: [Neil Daly](#) 07748 673187.

Who else is using it?

Skin Analytics have deployed teledermatology screening services for several private healthcare providers analysing over 1,500 cases. Vitality Health have been utilising Skin Analytics' teledermatology referral management system since 2015, improving cancer referral pathways in a convenient manner for the patient. Teledermatology cancer screening services are also being provided for West Hampshire CCG in both primary care and community-based dermatology clinics.

Endorsements

“Catching it early had been a blessing ... due to the Skin Analytics early detection for which I am extremely grateful to Neil and the team.” - **Simon Miller – Senior Director in Health Insurance and Melanoma survivor**

“Two-week rule referrals place an enormous burden on Dermatology services across the UK. However, typically fewer than 10% of such referrals turn out to have significant skin cancer. Teledermatology offers the potential to greatly improve the current referral pathway and ensure that the patients with skin cancer receive care, in both a quick and efficient manner.” - **Niall Wilson, Skin Analytics Medical Director and Consultant Dermatologist, Broadgreen Hospital**



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