



## Extended Research Article

# Artificial Intelligence technologies for assessing skin lesions for referral on the urgent suspected cancer pathway to detect benign lesions and reduce secondary care specialist appointments: early value assessment

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## Plain language summary

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## Plain language summary

**S**kin cancers and suspicious skin lesions are very common. People with moles or lesions that might be cancerous are referred to a skin cancer specialist (a dermatologist) to make a diagnosis. This places a very high burden on dermatology clinics and, as a result, there can be delays in seeing a dermatologist and getting a diagnosis. Artificial intelligence systems could potentially use a high-quality photograph to identify which lesions do not need to be seen by a specialist. This could be done by the artificial intelligence system alone, or in combination with remote review by a dermatologist.

This project investigated whether two artificial intelligence technologies: DERM (Skin Analytics) and Moleanalyzer Pro (FotoFinder) could be useful in reducing the burden on dermatology services while helping to identify skin cancer. The evidence was reviewed to investigate whether the technologies can accurately identify skin cancer cases, and whether their use might improve the diagnosis process for patients. We also designed a theoretical model in which the economic value of artificial intelligence technologies for the diagnosis of skin cancer could be assessed. As part of this process, we sought to outline what further evidence would be needed to implement a full assessment.

The evidence we reviewed suggests DERM could potentially reduce by half the number of patients that would be referred to specialist dermatologists, while still identifying 95% of all skin cancers. Moleanalyzer Pro could identify about 85% of malignant melanomas. This appears to be a similar accuracy to that achieved by using a remote view of the lesions by dermatologists alone. How DERM or Moleanalyzer Pro use would impact diagnosis and treatment for patients in practice, and the burden on clinicians, is currently unclear.

Because of limitations in the evidence on the diagnostic accuracy of artificial intelligence technologies, a full assessment of their economic value is not possible at this time. Further research should focus on better establishing the diagnostic accuracy of both artificial intelligence technologies and current service provision.

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### This article

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