

Appendix 5

Model for Assessment of telemedicine applications (MAST) Framework – Dermicus Teledermatology

The following table summarises key information drawn from the report to address the questions posed by the framework.

1	Preceding Considerations	<ul style="list-style-type: none"> • What is the purpose of the application? • Are there relevant alternatives? • Is this an international, regional or local level of assessment? • What is the maturity of the application? • Does the application fit into existing legislation? • Is the telemedicine service reimbursed? • How mature is the application? • What is the relevant number of patients expected to use the application? 	<ul style="list-style-type: none"> • Dermicus teledermatology permits primary care to take a photograph of a suspected cancerous lesion and upload it to a platform where it is shared with a dermatology specialist for a diagnostic review. This prevents unnecessary visits to dermatology outpatients, if negative. Other teledermatology platforms exist. • Dermicus was selected as the teledermatology platform for the Isle of Wight via the WAHSN Innovation Surgery and forms part of the Primary Care Demonstrator Site Programme. Gnosco AB has signed a multi-year contract to supply Lighthouse Medical with the Dermicus teledermatology platform for the delivery of its Teledermatology Assessment Service for the population of the Isle of Wight. • This local real world evaluation was conducted on the IOW because its location (an island) and older population provided an opportunity to evaluate this platform in the UK. • The product is relatively mature, and was CE marked in 2014 following a pilot in Sweden in 2012, where it was used in 100,000 consultations in Sweden and at commencement of the evaluation held over 40,000 images. • Annually there are approximately 600 referrals for skin lesions at commencement of the evaluation on the Island, which would move to the Dermicus teledermatology platform.
2	Multidisciplinary Assessment Comparison of the telemedicine application across seven outcome	Health problem and description of application	<p>Dermicus is used for all primary care referrals (routine, urgent and 2 week wait) for suspicious skin lesions. It is not currently used for other skin conditions e.g. rashes as these were not on a pathway that includes referral to secondary care.</p> <p>Dermicus was delivered to all primary care practices on the island and therefore a direct comparison with either a competing teledermatological approach or standard two week wait service was not undertaken. However, retrospective comparison with the original pathway was undertaken initially, however, although the Covid-19 pandemic illustrated the benefits of teledermatology the original planned comparison is not valid.</p>

	domains with one or more comparator:	Safety	<p>An issues log was maintained throughout the whole evaluation period from January 2020 to May 2021. Data was provided on safety incidents that warranted action. The following potentially serious issues were raised during the prolonged evaluation period of 16 months.</p> <ol style="list-style-type: none"> 1. Several referrals entered onto Dermicus by GP Practices were not received across the platform by Lighthouse Medical. A root cause analysis established this was an administrative oversight in the process of setting up new practices on the system. A new two-way check was introduced to mitigate this issue. 2. Secondly, information regarding two patients with a family history of skin cancer was not received by the reviewing specialist. Cause was not identified to rectify. Patients were not compromised because specialist confirmed their family history was not relevant to their diagnosis or treatment, in these instances. It however, remains a potential concern for future patients if unresolved. <p>Other minor issues reported included photo upload failure and temporary loss of access to the Dermicus platform. Gnosco responded promptly to resolve these issues. Gnosco provide a support line for Lighthouse to submit any issues for attention.</p>
		Clinical effectiveness	<p>Based on an estimate of 2,090 avoided face-to-face appointments over a period of 17 months, a 63% reduction compared to the original pathway and for the IOW Trust. Based on a 10 month period when all practices were delivering Dermicus this translates to eight avoided appointments per working day or 39 per week. This high proportion indicates that the use of the Dermicus has had a significant impact on reducing face-to-face appointments. Short waiting times were sustained throughout the COVID-19 pandemic, including during periods of national lockdown, suggesting that Dermicus was a particularly useful platform in light of growing delays and increased waiting lists seen elsewhere in the NHS at this time.</p> <p>The original evaluation plan expected to examine changes in the volume and casemix of referrals and for changes in waiting times compared to a three year baseline period, prior to the launch of Dermicus. Due to national guidance (March 2020) in response to the COVID-19 pandemic, NHS providers in England were asked to postpone non-urgent elective treatment. This impacted on dermatology referrals on the IOW in both fewer referrals overall (17% fewer for the 12 months March 2020 - February 2021 compared to the previous 12 months) and changes to the casemix and pattern of activity. As a result of changes in attending behaviour in both primary and secondary care, it was no longer valid to compare post-launch outpatient activity to a baseline period. Outcomes under the Dermicus pathway were compared with outcomes that would have been expected under the original pathway. Waiting times will be analysed over the same period and will compare Dermicus referrals to other referral types that were not received via the platform.</p>

			<p>This approach has been chosen to allow the evaluation team to explore how Dermicus has operated under the challenges of the COVID-19 pandemic while avoiding the issue of comparing baseline data to post-pandemic data that does not reflect typical outpatient activity. A full assessment of economic impact was not explored as part of this evaluation but we will instead focus on identifying avoided face-to-face activity brought about by Dermicus.</p>
	Patient perspectives		<p>Overall patients who responded were happy with the new pathway. The majority were aged over 65. Patients were reassured, and welcomed the easiness, simplicity and speed of diagnosis, and follow up information sent to them. Most were very grateful and thanked those involved for this new service. Some patients would prefer to see a specialist, for example, they lacked confidence with technology and wanted reassurance on safety. Face to face consultation was also preferred either because concerns remained following diagnosis, they preferred a physical examination or patients had outstanding questions.</p>
	Economic aspects		<p>The original plan wanted to determine whether the % of patients following a first dermatology consultation and subsequently discharged (inappropriate referrals) decreased over time which would indicate use of Dermicus teledermatology. By comparing cost of the previous and subsequent new pathway (taking into account both PbR (payment by results) and block contracts, start up and ongoing costs of implementing Dermicus and wider environmental impact of avoided appointments (if applicable). However, subsequently it was agreed that Covid-19 had impacted on payment arrangements and the number of referrals and so an estimate of avoided face-to-face appointments was undertaken to look at avoided activity without assigning actual costs.</p> <p>Waiting Times:</p> <p>In the interim report (Jan 2020 – Feb 2020), we reported that all Dermicus referrals have a response time of 2 working days or less. From:</p> <ul style="list-style-type: none"> • 63% were responded to on the same working day • 36% were responded to the next working day • 1% were responded to within 2 working days. <p>The average wait from referral to first consultant review for all Dermatology referrals prior to the implementation of Dermicus is 26 days. Waiting times by priority type are shown below.</p> <ul style="list-style-type: none"> • Average wait for Routine Referrals = 33 days

		<ul style="list-style-type: none"> • Average wait for Urgent Referrals = 27 days • Average wait for Two Week Wait Referrals = 10 days <p>The average waiting time for Dermicus is 0.6 days so whichever category Dermicus activity falls under, it represents a clear reduction in waiting times from the previous level of 10+ days.</p> <p>Expected avoided appointments estimated:</p> <p>It is estimated that Dermicus can achieve a 63% reduction in face-to-face appointments by the patient avoiding an outpatient appointment in the early part of the cancer pathway. However multiple factors may have influenced the volume of referrals received by the Isle of Wight Trust since January 2020 that make prediction of how many appointments another organisation might expect to avoid. Factors that might have affected</p>
	Organisational aspects	<p>The NoMAD and interview data provided an overall view of implementation into healthcare systems on the Island. Overall scores were high showing that the platform is not overly complex and easily adapted into normal working patterns in primary care. Staff had a fair idea of what Dermicus was and was for and who they needed to involve to use it, but they had less clarity or confidence about how to integrate Dermicus into their context and limited feedback or monitoring mechanisms to know if Dermicus was working within their context.</p> <p>Additional information in the staff interviews</p>
	Socio-cultural, ethic and legal aspects	<p>The significant reduction in the length of time between referral and review minimises anxiety experienced by patients and their families.</p> <p>The platform reduces unnecessary outpatient appointments, meaning that patients do not have to travel to clinic and therefore do not require time away from work or need to arrange childcare etc. and that there is significantly less impact on their day to day life from this part of the pathway.</p> <p>There is also an environmental benefit to these reductions in travel.</p> <p>In the context of the current COVID-19 pandemic, the platform enables older and vulnerable patients to avoid unnecessary hospital attendances.</p> <p>With regard to legal issues, there is the possibility that missed or incorrect diagnosis might incur liability. Given the identified problems with a small number of referrals either not being passed to the reviewers, or being sent without complete information is a legitimate concern. This concern is managed by Lighthouse undertaking routine and regular diagnostic reviews</p>

3	Assessment of transferability	<ul style="list-style-type: none"> • Cross Border • Scalability • Generalisability 	<p>The Dermicus teledermatology has successfully embedded into the IOW NHS Trust primary care cancer referral pathways and is utilised across all 12 primary care practices. However, no comparison with a similar teledermatology product was conducted with this evaluation. Particular service arrangements (Lighthouse) on the IOW may have contributed to the spread of Dermicus on the Island. Further evaluation for national scale up is proposed. See above expected avoided appointments</p>
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