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A new virtual inpatient dermatology electronic referral service: a timely solution in the COVID-19 pandemic and beyond?

Dear Editor,

The use of teledermatology in an inpatient setting is not well-established, with limited data published compared to the outpatient setting. It has, however, been demonstrated that teledermatology may be effective for managing inpatient dermatologic disease, leading to highly concordant diagnostic and management decisions.[1,2] Involvement of dermatologists in the care of hospitalized patients has been found to improve patient outcomes[3] with inpatient teledermatology reducing response times.[4]

We set up a store-and-forward, fully digitized, virtual inpatient referral service to replace our traditional paper-based, face-to-face (FTF) inpatient referral pathway, amidst the COVID-19 pandemic. Our health board in Wales, UK, covers a relatively wide geographical area across 1553 km^2, accounting for 30% of the Welsh landmass, but covering only 18% of the population of 3.1 million. We cover inpatients across six different hospital sites, two of which have traditionally had inequitable access to a dermatology opinion as they lack regular onsite clinics. The old system was onerous for both clinicians and administrative staff, as historically inpatient referrals comprised handwritten forms manually delivered or faxed between hospitals. Referrals often lacked vital clinical information, comprised illegible handwriting and frequently went missing. We therefore implemented an entirely paperless, electronic referral pathway that integrated with the electronic patient record (EPR) and enabled virtual rather than FTF review.

An e-referral form was designed for referrers to include essential clinical information, with medical photographs requested alongside. High-quality images were taken by the medical illustration service and uploaded securely onto the EPR. Dermatology residents reviewed referrals virtually, relaying advice back to the referring clinician. Referrals, including patient metadata, from all inpatient specialties across the six hospitals over a 10-week period from 14 July to 30 September 2020 were assessed. A five-point Likert scale was used to assess the degree of confidence residents felt in managing inpatients virtually.

Of 95 consecutive referrals, 55% were male and 45% female (age range 0–103 years; average 63.8). Almost all (96%) were judged to be appropriately directed to dermatology. Most referrals (84%) were successfully dealt with virtually. The majority of the remaining 16% comprised patients that required a biopsy, paediatric cases needing parental reassurance and complex medical cases. A wide variety of dermatological conditions were diagnosed and managed, both inflammatory and lesions, and 87% were discharged with appropriate advice.

The average response time was 1.9 days, 66% were dealt with within 24 h and 77% within 48 h (Fig. 1a). The rate-limiting step was waiting for accompanying images, accounting for 74% of variance in the time awaiting review (Fig. 1b). Residents felt highly confident in 62% cases (Fig. 1c). A senior review was needed in 65%, of which 99% were easy to obtain.

Our virtual platform has widened the reach of timely specialist input across sites where dermatology services have not traditionally been based, ensuring equitable access for patients, independent of location. It establishes a secure and permanent

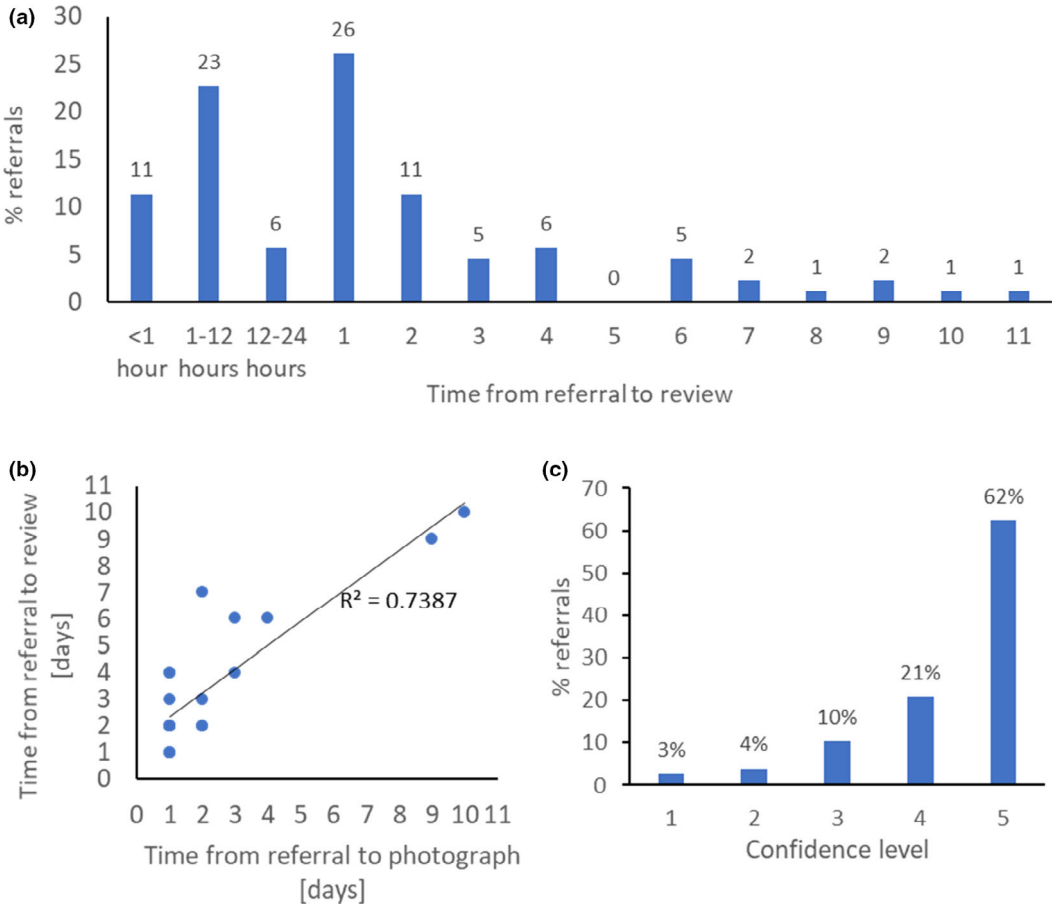

Figure 1 (a) Time taken between initial dermatology referral and review by clinician. (b) Relationship between the time from referral to requested medical photographs being available and time from referral to review when photographs unavailable on the day of review. (c) Level of confidence (1 least–5 most confident) in diagnosis from e-referrals based on medical images.

digital record, enabling effective handover of acutely unwell inpatients (Table 1). This format also lends itself to peer review of images and virtual ward rounds,[5] and therefore contributes substantially to the education and training of residents, particularly in meeting their teledermatology training needs,[6,7] a boon during the pandemic wherein resident training has unavoidably

Table 1 Benefits and limitations of a new virtual electronic inpatient dermatology referral service versus a paper and face-to-face (FTF) system

Benefits	Limitations
Faster access to dermatology opinions for inpatients	Access to photographs rate-limiting step
All essential clinical details fully included in e-referral	Accuracy of diagnosis reliant on quality of photographs
Automatic paper trail (no referrals physically misplaced)	Need to convert to FTF for some patients if diagnosis unclear and/or biopsy required
Audit (centrally recorded list of virtual activity)	Reliance on a non-dermatologist to communicate with patient
Access from all hospital sites	
Equity of service – opinions available for distant hospital sites	
Enhanced access to senior review	
Enhanced access to peer review	
Resident teaching using virtual ward rounds	
Typed dermatology opinion recorded on patient record	

been impacted by altered patient flow. Until COVID-19, teledermatology was underutilized in the inpatient setting. FTF review remains the gold standard for inpatient consultations. Nonetheless, we conclude that most inpatient referrals can be confidently managed virtually, thereby increasing efficiency, reducing response time and obviating the need for FTF ward visits in a safe, timely and equitable manner. This is particularly significant in our current climate, reducing the attendant risk of cross-contamination between sites.

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Conflict of interest

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Good tolerance of hyaluronic acid injections during the period of the COVID-19 pandemic: observing a cohort of 1093 patients in a prospective, observational real-life study

Dear Editor,

Dermatologists have questioned the possibility of continuing hyaluronic acid (HA) injections during the COVID-19 pandemic period, fearing especially an increase in immune complications. Therefore, the Group for Aesthetic and Corrective Dermatology of the French Society of Dermatology (gDEC) decided to set up a prospective, clinical study over the period May to July 2020 to follow a large patient cohort being injected with HA during the COVID-19 pandemic.

Overall, 14 dermatologists working in France, Belgium and Switzerland participated in the study. Each physician included all patients during the observation period that received facial HA injections. Participating physicians were encouraged to treat all patients according to their usual practice. Due to the COVID-19 pandemic, the hygiene measures were reinforced by the use of hydroalcoholic gel of physician and patient and the practitioners wearing a FFP2 masks at all times during the patient encounters. All products injected were commercially available within Europe and were purchased by the physicians.

Two types of side-effects were recorded: (i) patient self-reported side-effects at any time of the study, (ii) side-effects discovered during the systematic follow-up by the treating physician at 1 and 3 months after the treatment.

A total of 1093 patients were included. Overall, 1927 syringes of HA were used, i.e. an average of 1.8 syringes per patient. 921 and 873 patients were reached, respectively, for the 1- and 3-month systematic follow-up. Ten patients with COVID-19 infection were injected later than 2 months after their infection. Five patients were diagnosed with an active COVID-19 infection within 3 months after their HA injection. 19 (1.7%) side-effects were reported, three self-reported and 16 (84% of side effect) observed at systematic follow-up. The recorded side-effects were those frequently associated with HA filler injections like erythema, oedema and temporary discomfort. They were all self-resolving within a few days and occurred in the absence of symptoms suggestive of COVID-19 infection. No further serious or unexpected side-effects were reported. A summary of the results can be found in Table 1.

Our study shows an excellent tolerance of HA injections during the COVID-19 pandemic. No immune complications, that

