

# From 84 days to 5 hours: Telemedicine reduces dermatology consult time

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A new study from researchers in the Perelman School of Medicine at the University of Pennsylvania and Independence Blue Cross shows that when patients' primary care doctors were able to photograph areas of

concern and share them with dermatologists, the response time for a consultation dropped from almost 84 days to under five hours. In addition, the study did not show any undue increases in utilization or cost that might be prohibitive to making the practice widespread. The findings were published today in *Telemedicine and e-Health*.

"Telemedicine offers the opportunity to accelerate [health care access](#) by getting around infrastructure barriers: namely, heavily booked dermatology practices," said the study's senior author, Jules Lipoff, MD, an assistant professor of Clinical Dermatology. "Our study provides evidence that more patients can be cared for with the same amount of resources we're using now."

Although this study's data comes from before the emergence of COVID-19, [telemedicine](#) measures like these have taken on a particular importance since the outbreak because of its ability to accommodate social distancing.

"The COVID-19 pandemic has illustrated just how important it is to ensure patients have the ability to access the care, education and support they need virtually," said co-author Aaron Smith-McLallen, director of Health Informatics and Advanced Analytics at Independence Blue Cross. "We see a future where more and more of our members will be using digital tools to complement in-person care, and we are working with our provider partners to make that a reality."

Lipoff, Smith-McLallen, and their fellow researchers, including lead author Neha Jariwala, MD, a resident in Dermatology, designed the study to implement a shared digital photography service (also known as "Store-and-Forward") between providers. Previously, similar models had been tested in smaller patient groups—including in the inpatient setting as part of the Penn Medicine Center for Health Care Innovation's accelerator program in 2013. In this larger study, five primary care

practices trained their clinicians to take the photos received over a secure application to a rotation of eight dermatologists for consults. This workflow was used instead of the usual process of referring patients to the next available in-person dermatology appointment.

In the study's process, once the dermatologists reviewed the pictures of the concerning areas, they then responded to the primary care physician with clinical recommendations, which included a triage determination of whether an in-person visit with a dermatologist was needed. The study's dermatologists also did these consultations within the course of their regular clinical duties without needing additional dedicated time to the effort.

Overall, 167 patients took part in the study, with a retrospective control group of 1,962 patients for comparison who had followed the traditional consultation system of seeing their primary care doctor, receiving a referral, and then scheduling an in-person appointment with a dermatologist.

In addition to the dramatic reduction in time to consultation, the study also suggested that the difference in total medical costs did not significantly differ between the telemedicine patients and those in the non-telemedicine arm of the study. Moreover, there was not a significant increase in consults when telemedicine was used compared to the previous process.

The study was conducted from June 2016 until May 2017, well before the COVID-19-related expansion of telemedicine, which was due, in large part, to the relaxation of rules for care reimbursement, traditionally the highest barrier for widespread telemedicine use. However, those changes have been mostly related to video calls with health care providers.

"Video-based telemedicine has been extremely helpful amid the social distancing precautions brought about by the COVID-19 outbreak," Lipoff explained. "But we also need to look toward how we can expand other forms that may be more efficient in delivering care, such as 'Store-and-Forward' and hybrid models, since we've shown how effective they can be."

It is unclear whether many of the changes in telemedicine brought about from the COVID-19 expansion will become permanent. But the researchers hope their study can serve as proof of the viability of photo-based telemedicine for dermatology – and other specialties, too.

**More information:** Neha N. Jariwala et al, Prospective Implementation of a Consultative Store-and-Forward Teledermatology Model at a Single Urban Academic Health System with Real Cost Data Subanalysis, *Telemedicine and e-Health* (2020). [DOI: 10.1089/tmj.2020.0248](https://doi.org/10.1089/tmj.2020.0248)

Provided by Perelman School of Medicine at the University of Pennsylvania

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