

Teledermatology During the COVID-19 Pandemic: Lessons Learned and Future Directions

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Although teledermatology utilization in the United States traditionally has lagged behind other countries,^{1,2} the COVID-19 pandemic upended this trend by creating the need for a massive teledermatology experiment. Recently reported survey results from a large representative sample of US dermatologists (5000 participants) on perceptions of teledermatology during COVID-19 indicated that only 14.1% of participants used teledermatology prior to the COVID-19 pandemic vs 54.1% of dermatologists in Europe.^{2,3} Since the pandemic started, 97% of US dermatologists reported teledermatology use,³ demonstrating a huge shift in utilization. This trend is notable, as teledermatology has been shown to increase access to dermatology in underserved areas, reduce patient travel times, improve patient triage, and even reduce carbon footprints.^{1,4} Thus, to sustain the momentum, insights from the recent teledermatology experience during the pandemic should inform future development.

Notably, the COVID-19 pandemic led to a rapid shift in focus from store-and-forward teledermatology to live video-based models.^{1,2} Logistically, live video visits

are challenging, require more time and resources, and often are diagnostically limited, with concerns regarding technology, connectivity, reimbursement, and appropriate use.³ Prior to COVID-19, formal Health Insurance Portability and Accountability Act-compliant teledermatology platforms often were costly to establish and maintain, largely relegating use to academic centers and Veterans Affairs hospitals. Thus, many fewer private practice dermatologists had used teledermatology compared to academic dermatologists in the United States (11.4% vs 27.6%).³ Government regulations—a key barrier to the adoption of teledermatology in private practice before COVID-19—were greatly relaxed during the pandemic. The Centers for Medicare and Medicaid Services removed restrictions on where patients could be seen, improved reimbursement for video visits, and allowed the use of platforms that are not Health Insurance Portability and Accountability Act compliant. Many states also relaxed medical licensing rules.

Overall, the general outlook on telehealth seems positive. Reimbursement has been found to be a primary factor in dermatologists' willingness to use teledermatology.³

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Thus, sustainable use of teledermatology likely will depend on continued reimbursement parity for live video as well as store-and-forward consultations, which have several advantages but currently are de-incentivized by low reimbursement. The survey also found that 70% of respondents felt that teledermatology use will continue after COVID-19, while 58% intended to continue use—nearly 5-fold more than before the pandemic.³ We suspect the discrepancy between participants' predictions regarding future use of teledermatology and their personal intent to use it highlights perceived barriers and limitations of the long-term success of teledermatology. Aside from reimbursement, connectivity and functionality were common concerns, emphasizing the need for innovative technological solutions.³ Moving forward, we anticipate that dermatologists will need to establish consistent workflows to establish consistent triage for the most appropriate visit—in-person visits vs teledermatology, which may include augmented, intelligence-enhanced solutions. Similar to prior clinician perspectives about which types of visits are conducive to teledermatology,² most survey participants believed virtual visits were effective for acne, routine follow-ups, medication monitoring, and some inflammatory conditions.³

Importantly, we must be mindful of patients who may be left behind by the digital divide, such as those with lack of access to a smartphone or the internet, language barriers, or limited telehealth experience.⁵ Systems should be designed to provide these patients with technologic and health literacy aid or alternate modalities to access care. For example, structured methods could be introduced to provide training and instructions on how to access phone applications, computer-based programs, and more. Likewise, for those with hearing or vision deficits, it will be

important to improve sound amplification and accessibility for headphones or hearing aid connectivity, as well as appropriate font size, button size, and application navigation. In remote areas, existing clinics may be used to help field specialty consultation teleconferences. Certainly, applications and platforms devised for teledermatology must be designed to serve diverse patient groups, with special consideration for the elderly, those who speak languages other than English, and those with disabilities that may make telehealth use more challenging.

Large-scale regulatory changes and reimbursement parity can have a substantial impact on future teledermatology use. Advocacy efforts continue to push for fair valuation of telemedicine, coverage of store-and-forward teledermatology codes, and coverage for all models of care. It is imperative for the dermatology community to continue discussions on implementation and methodology to best leverage this technology for the most patient benefit.

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