

**LETTER**

# COVID-19: An opportunity to build dermatology's digital future

Dear Editor,

In addition to the public health and economic calamity, the coronavirus disease 2019 (COVID-19) pandemic has had multifaceted effects on the practice of dermatology. However, times of great crisis are also times of transformative change. Over the last 2 months, more progress has been made in the adoption of teledermatology than over the last two decades—the Centers for Medicare and Medicaid Services (CMS) has provided compensation parity for teledermatology visits and waived potential penalties for health insurance portability and accountability act (HIPAA) violations when treating patients through modalities such as FaceTime and Skype.<sup>1</sup> Similarly, the American Academy of Dermatology has issued guidelines to practices for implementing teledermatology workflows.<sup>1</sup> In effect, dermatologists have embraced a digital future.

Just as telemedicine represents one pillar of dermatology's digital future, augmented intelligence (Aul), otherwise known as artificial intelligence, represents another promising component of dermatology's digital future. Recent advances in Aul have generated both hype as well as hope that Aul algorithms will be able to detect and diagnose skin disease.<sup>2</sup> For example, numerous direct-to-consumer smartphone apps have been developed to evaluate lesions for potential melanoma. However, a recent systematic review noted high rates of false negatives and wide variability in accuracy, with sensitivities ranging from 7% to 73% and specificities ranging from 37% to 94%.<sup>3</sup> This substantial variation in performance highlights the caution we must exercise in embracing new technologies. Dermatologists should critically appraise Aul applications in the same way we appraise any new medication or procedure.

However, this does not mean dermatologists should ignore Aul. Rather, dermatologists should reimagine how Aul can be used. Although Aul is not yet capable of automating diagnoses, Aul is capable of streamlining administrative tasks. For example, Mayo Clinic has developed an Aul algorithm to automatically organize dermatology images stored within the institution's electronic health record.<sup>4</sup> This enables researchers to quickly assemble a cohort of specific image types for research rather than manually sift through individual patient encounters. Another algorithm could be used to ensure patients are taking sufficient quality images for store-and-forward tele-dermatology. In light of the COVID-19 pandemic, many patients find themselves using teledermatology for the first time. Therefore, an assistive algorithm could alert patients if the image they have

uploaded is blurry or does not have adequate lighting. Similarly, dermatologists face significant administrative challenges as they look to reopen their in-person practices amidst the pandemic. Aul algorithms could utilize electronic health record data to stratify patients based on their risk factors and assist in triaging patients for in-person vs virtual visits. Furthermore, this would provide dermatology practices valuable information to optimize scheduling and staffing. Although less awe-inspiring than automated diagnoses of melanoma, Aul applications for administrative tasks would still provide significant efficiency gains for our health care system.

Dermatologists have a long-standing history of pioneering advances in digital medicine, dating back to at least 1972 when the first teledermatology platform was implemented in the United States.<sup>5</sup> Therefore, as we emerge from the pandemic, dermatologists are uniquely positioned to lead a digital transformation in health care. This transformation has the potential to reduce administrative burdens and to improve patient care.

## CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

## AUTHOR CONTRIBUTIONS

All authors contributed to the conception, critical revision, and drafting of this manuscript.

## DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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