

# Effectiveness of Pediatric Teledermatology

Jacob Beer,<sup>a</sup> Edward Hadel,<sup>b</sup> Shant Tamazian,<sup>a</sup> Keyvan Nouri MD<sup>b</sup>

<sup>a</sup>Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

<sup>b</sup>Dr. Phillip Frost Department of Dermatology and Cutaneous Surgery, Miller School of Medicine, University of Miami, Miami, FL

## INTRODUCTION

Initial studies of teledermatology in pediatric populations indicated that many of the problems experienced in adult virtual visits were even more apparent when treating children. Specifically, it was noted that the difficulty in obtaining medical history and participation of the pediatric patients provided additional challenges in evaluation.<sup>1</sup> Direct-to-consumer models have highlighted many of these challenges as well as a general lack of continuity of care previously seen in pediatric teledermatology. Addressing these challenges may be accomplished by further involving parents in the teledermatology workflow.

O'Connor et al conducted a randomized controlled trial that evaluated whether utilizing smartphone photographs taken by parents was sufficient to diagnose conditions compared to in-person visits.<sup>2</sup> In this study, diagnostic concordance was evaluated in 40 patient-parent dyads. Here, diagnoses were made by third-party non-affiliated pediatric dermatologists who compared diagnoses from in-person examinations with diagnoses made through the use of photographs provided by parents. An additional subgroup composed of half the dyads was randomized to receive instructions on how to take photographs. Overall concordance was 83% between in-person and teledermatology arms, though notably it was 89% when photographs were deemed high-quality. There was no significant difference between groups who received instructions and those who did not. This indicates that virtual visits for pediatric cases are not only sufficient to make an accurate diagnosis, but also that specific instructions to parents may not be necessary to provide high quality care.

An additional challenge encountered in pediatric teledermatology is the prolonged wait-time to see a provider. In a typical workflow, patients are referred to dermatologists by primary providers. These patients often wait a month or longer to see a specialist. Given the high degree of specialization among pediatric dermatologists, the wait-times to see these providers may be particularly prolonged. A recent retrospective study evaluating the use of an eConsult program demonstrated that a significant amount of time that patients wait while utilizing both teledermatology and in-person dermatology can be avoided altogether, freeing patients to spend that time in other ways.<sup>3</sup> Through this program, primary providers submit images to dermatologists who then provide recommendations promptly, or

schedule the patient for in-person follow-up. In the retrospective study utilizing this program, the median time-to-consult was extremely low (1.8 days) when compared to times for patients with standard follow-up (37.4 days). Additionally, of the 188 cases that were submitted, only 32% of the visits ultimately required face-to-face evaluation. A similar study reinforced these results, demonstrating that an electronic consultation platform could reduce time-to-consult (12.1 hours), with only 10 of 43 patients needing an in-person evaluation.<sup>4</sup> These studies showcase teledermatology as a means of improving access to dermatologic care among children.

Despite the challenges commonly stated in pediatric teledermatology, studies have found teledermatology to be an effective modality in triaging pediatric patients. The inherent difficulties seen in pediatric teledermatology make virtual care, particularly using store-and-forward methods, a clinically viable and beneficial alternative to face-to-face visits. As such, pediatric teledermatology may provide a crucial role in triaging dermatologic conditions with overall high effectiveness.

## DISCLOSURES

The authors have no conflicts of interest to declare.

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## AUTHOR CORRESPONDENCE

Jacob Beer

E-mail: ..... jacob.beer@pennmedicine.upenn.edu