

Evaluating the cost-effectiveness of teledermatology



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In a recent study by Snoswell et al, the authors modeled the cost-effectiveness of a consultation system using teledermoscopy for skin cancer diagnosis and management in Australia.¹ They estimated that, compared with conventional care, teledermoscopy could reduce the mean time to diagnosis by a dermatologist or excision by a general practitioner by 26 days (35 vs 9 days). In their cost analysis, Snoswell et al estimated that the mean cost difference between the teledermoscopy program and usual care was an additional A\$54.64 per person (A\$318.39 vs A\$263.75). This teledermoscopy program improved expediency of care at higher cost to the health system.

We conducted a cost-effectiveness analysis for 700 cases managed by a store-and-forward (SAF) teledermatology (TD) program implemented for a predominantly Medicaid population in Philadelphia. In our study, referring physicians were asked how they would manage the patient in the absence of TD (manage on their own, refer to dermatologist, or refer to emergency room).² We found that 27% of consults avoided an in-person dermatology visit and 3% of consults avoided an emergency room visit. In contrast to the results reported by Snoswell et al, this SAF TD program was estimated to save between \$10.00-\$52.65 per TD consult compared with conventional care.

There are several key differences between these studies. Snoswell et al examined teledermoscopy targeting only lesions concerning for skin cancer, whereas our SAF TD program included any dermatologic issue for which a substantial proportion of in-person dermatology and emergency room visits could be prevented, thus contributing to cost savings. In addition to the diagnostic limitations of TD for evaluation of suspected skin cancer, TD may be less cost-effective in this setting because many

patients ultimately require an in-person visit for a biopsy or excision, thus creating redundant clinical activity.³ In our SAF TD program, most consultations were for a rash and the vast majority (>80%) could be managed with SAF TD alone.⁴ These avoided visits were associated with significant cost savings.

Because the model developed by Snoswell et al was not based on consults from an actual TD program, many assumptions were required. Data used in the model were obtained not only from Australian cost data and reports but also from international cohort studies from New Zealand, the United States, and Spain, thus creating a heterogeneous data set. Their model also attributed an equivalent cost to TD and in-person dermatology consultations even though TD consultations are likely less costly, and they found that TD was closer to being cost-effective when they reduced the cost of the TD consultation.

Finally, it is imperative to recognize that TD may provide additional direct and indirect savings to patients (eg, transportation costs, the cost of missed work), which neither study evaluated. Because these costs can be substantial, the overall cost-effectiveness to the community may be more significant.⁵

With appropriate patient selection and reimbursement, TD has the potential to increase access to high-quality dermatologic care while being cost-effective to the health system. Continued evaluation of how to optimize TD programs will ensure that these programs are best able to serve the diverse needs of our patients.

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