

# Impact of dermatology eConsults on access to care and skin cancer screening in underserved populations: A model for teledermatology services in community health centers

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**Background:** The clinical outcome of teledermatology with dermoscopy in large-scale primary care networks remains unclear.

**Objective:** We evaluate the impact of implementing a teledermatology consultation program with dermoscopy on a statewide scale, focusing on access to care and skin cancer screening for medically underserved populations.

**Methods:** Descriptive retrospective cohort study of 2385 dermatology referrals from primary care from June 2014 through November 2015.

**Results:** Before implementation of electronic consultations (eConsults), access to dermatology was limited; only 139 (11%) of 1258 referrals resulted in a confirmed appointment with a median wait time of 77 days. Post implementation, 499 of 1127 consults (44%) were sent electronically, and of those, 16% required a face-to-face visit with a median wait time of 28 days. Ten malignancies were identified via eConsults. Overall consult volume remained stable pre- and post-eConsult implementation.

**Limitations:** We evaluated eConsults in medically underserved populations seeking care at community health centers. Results might not be generalizable to other populations or in other settings.

**Conclusion:** eConsults increase access to dermatologic care and reduce wait times for patients receiving medical care at community health centers. Implementing dermoscopy into teledermatology could increase access to skin cancer screening and treatment for medically disadvantaged populations. (J Am Acad Dermatol <https://doi.org/10.1016/j.jaad.2017.09.017>.)

**Key words:** access; dermoscopy; diagnosis; eConsults; skin cancer; store-and-forward; teledermatology; underserved populations.

Dermatologic conditions affect approximately one third of people in the United States.<sup>1,2</sup> Despite efforts to expand insurance coverage, access to specialty care for uninsured and Medicaid patients remains limited.<sup>3,4</sup> Access to

dermatologic care is particularly challenging due to the shortage of dermatologists, limited acceptance of state-funded insurance plans, and geographic barriers.<sup>5</sup> Asynchronous (store-and-forward) teledermatology has emerged as a promising solution to

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improve access to dermatologic care by providing off-site dermatologic evaluation and treatment recommendations.<sup>6-10</sup>

Less than half of patients referred from primary care to dermatology in the United States receive an appointment.<sup>11</sup> This limitation is especially problematic among medically disadvantaged populations.<sup>3,12</sup> For instance, only 37% of dermatologists in Connecticut accept new Medicaid patients. In some states, such rates are as low as 20%.<sup>13</sup> Compared with patients with private insurance or Medicare, Medicaid patients have to wait 34% longer for an appointment.<sup>3</sup> Moreover, Medicaid patients and the underinsured are more likely to miss appointments, which correlates with observed longer wait times.<sup>14-16</sup>

Some studies have suggested the potential of electronic consultations (eConsults) to improve access to dermatology and other specialty care.<sup>7,8,17,18</sup> However, few have evaluated the impact of teledermatology with implementation of dermoscopy on a large, statewide scale, across varying regions and networks. This study evaluated the outcomes of a Medicaid-funded, statewide implementation of a store-and-forward teledermatology program augmented by the incorporation of dermoscopy.

## METHODS

### Study design

This study used a descriptive retrospective cohort design and was reviewed and approved by the Institutional Review Board of Community Health Center Inc. There were 2 comparison groups: patients referred to dermatology during the 6 months before implementation of eConsults and patients referred during the 6-month period after eConsult implementation. The post-eConsult group was further subdivided into 2 subgroups: patients sent to eConsult and patients directly sent for a face-to-face (F2F) visit without an eConsult.

### Setting

Community Health Center Inc (CHCI) is a large, multisite Federally Qualified Health Center providing comprehensive primary health care services to >140,000 patients in Connecticut. Over 60% of CHCI's patients are of racial/ethnic minorities and

>90% are at or below 200% of the Federal Poverty Level. Approximately 70% of CHCI's patients have state-funded Medicaid insurance, and about 8% are uninsured. UConn Health Center is a large, state-funded tertiary care center. Two UConn Health Center board-certified dermatologists participated in the eConsults project. The Connecticut Department of Social Services provided reimbursement for eConsults provided to Medicaid patients based on a state plan amendment that was approved by the Centers for Medicaid and Medicare.

### Intervention

Each CHCI practice site was provided with a camera (Cannon Powershot ELPH 360HS, cost USD \$200) and dermatoscope (3.5V pro-physician dermatolight-LED, cost USD \$110). Primary care providers (PCPs) and medical assistants received a PowerPoint tutorial on best practices for image acquisition, including taking dermatoscopic photos. They were also provided with *Quick Guides for Store-Forward Teledermatology for Referring Providers* published by the American Teledermatology Association. Pilot and training sessions took place during a 3-month period before formal implementation of the eConsult program. During this timeframe, PCPs were given the option of sending images to an eConsult provider using a trial-and-error method to receive feedback.

PCPs were given the option of sending an eConsult or requesting a standard in-person referral. For all consults, the referral request was entered into the electronic health record (EHR) and sent to a centralized referral coordinator. If an in-person appointment was requested, the referral coordinator attempted to obtain an appointment with a local dermatologist. If an eConsult was requested, the referral coordinator would upload information from the medical record, including clinical and dermatoscopic images, clinical notes, and other relevant information to a web-based eConsult platform. The reviewing dermatologist logged onto the web-based platform to retrieve, review, and provide diagnosis and treatment plan for the PCP to implement or recommend a F2F evaluation. When F2F consultations were recommended, patients were prioritized to a fast-track dermatology appointment. One hour per week was set aside for these patients. The

### CAPSULE SUMMARY

- Medicaid and uninsured patients are disparately affected by limited access to dermatologic care.
- Implementing dermoscopy into teledermatology aids in skin cancer identification and treatment for medically disadvantaged patients.
- Establishment of dermatology eConsults at community health centers significantly improves access to dermatologic care and decreases no-show rates in underserved populations.

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