

E-Consults in Dermatology: A Retrospective Analysis

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PRACTICE POINTS

- Most electronic consult patients may be able to avoid in-person dermatology appointments.
- E-consults can increase patient access to dermatologic specialty care.

Dermatology electronic consultations (e-consults) placed by primary care providers (PCPs) can increase access to specialty care while reducing wait times and providing accurate clinical outcomes. These e-consults also may reduce barriers for underserved patients who historically have limited access to dermatologic care. Our retrospective chart review examines patient outcomes from a dermatology e-consult program at a tertiary care medical center. E-consults effectively increased access to dermatology care while shortening wait times and reducing health care expenditures.

Cutis. 2024;113:107-109, E3.

Dermatologic conditions affect approximately one-third of individuals in the United States.^{1,2} Nearly 1 in 4 physician office visits in the United States are for skin conditions, and less than one-third of these visits are with dermatologists. Although many of these patients may prefer to see a dermatologist for their concerns, they may not be able to access specialist care.³ The limited supply and urban-focused distribution of dermatologists along with reduced acceptance of state-funded insurance plans and long appointment wait times all pose considerable challenges to individuals seeking dermatologic care.² Electronic consultations (e-consults) have emerged as a promising solution to overcoming these barriers while providing high-quality dermatologic care to a large diverse patient population.^{2,4} Although e-consults can be of service to all dermatology patients, this modality may

be especially beneficial to underserved populations, such as the uninsured and Medicaid patients—groups that historically have experienced limited access to dermatology care due to the low reimbursement rates and high administrative burdens accompanying care delivery.⁴ This limited access leads to inequity in care, as timely access to dermatology is associated with improved diagnostic accuracy and disease outcomes.³ E-consult implementation can facilitate timely access for these underserved populations and bypass additional barriers to care such as lack of transportation or time off work. Prior e-consult studies have demonstrated relatively high numbers of Medicaid patients utilizing e-consult services.^{3,5}

Although in-person visits remain the gold standard for diagnosis and treatment of dermatologic conditions, e-consults placed by primary care providers (PCPs) can improve access and help triage patients who require in-person dermatology visits.⁶ In this study, we conducted a retrospective chart review to characterize the e-consults requested of the dermatology department at a large tertiary care medical center in Winston-Salem, North Carolina.

Methods

The electronic health record (EHR) of Atrium Health Wake Forest Baptist (Winston-Salem, North Carolina) was screened for eligible patients from January 1, 2020, to May 31, 2021. Patients—both adult (aged ≥ 18 years) and pediatric (aged < 18 years)—were included if they underwent a dermatology e-consult within this time frame. Provider notes in the medical records were reviewed to determine the nature of the lesion, how long the dermatologist took to complete the e-consult, whether an in-person appointment was recommended, and whether the patient was seen by dermatology within 90 days of the e-consult. Institutional review board approval was obtained.

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The eTable is available in the Appendix online at www.mdedge.com/dermatology.

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doi:10.12788/cutis.0975

For each e-consult, the PCP obtained clinical photographs of the lesion in question either through the EHR mobile application or by having patients upload their own photographs directly to their medical records. The referring PCP then completed a brief template regarding the patient's clinical question and medical history and then sent the completed information to the consulting dermatologist's EHR inbox. From there, the dermatologist could view the clinical question, documented photographs, and patient medical record to create a brief consult note with recommendations. The note was then sent back via EHR to the PCP to follow up with the patient. Patients were not charged for the e-consult.

Results

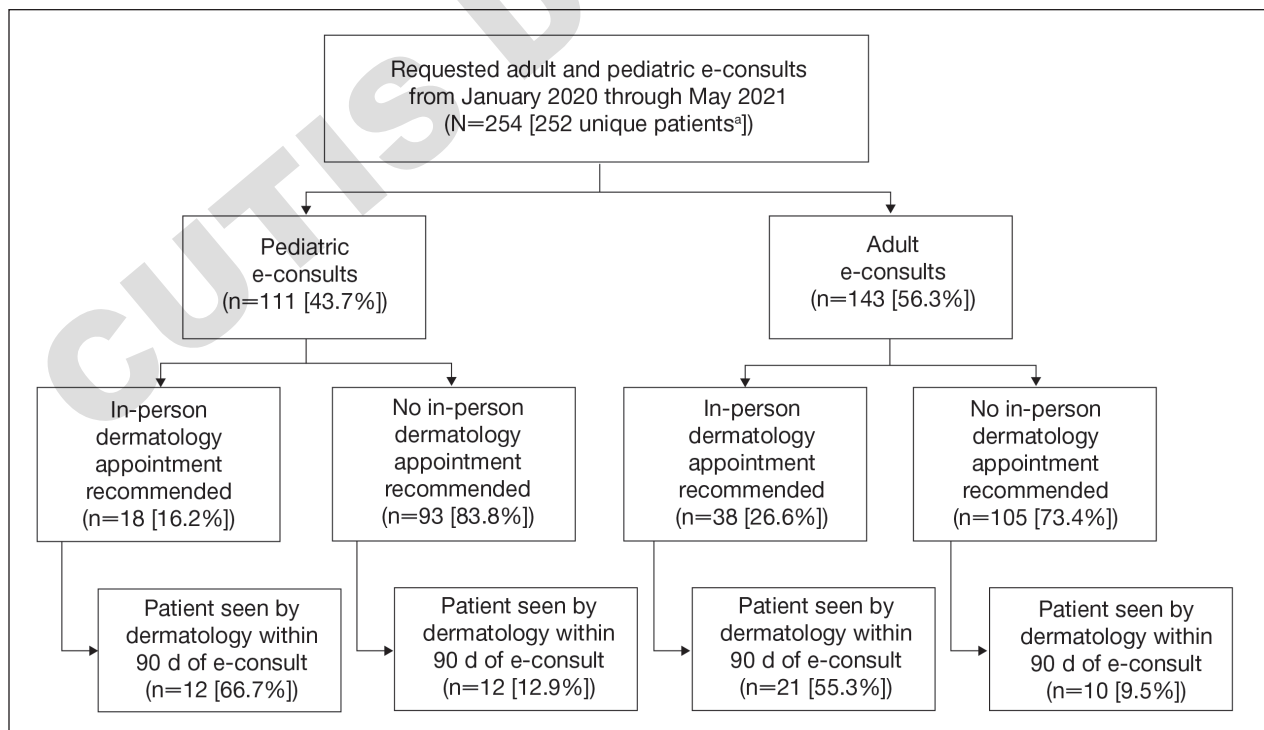
Two hundred fifty-four dermatology e-consults were requested by providers at the study center (eTable), which included 252 unique patients (2 patients had 2 separate e-consults regarding different clinical questions). The median time for completion of the e-consult—from submission of the PCP's e-consult request to dermatologist completion—was 0.37 days. Fifty-six patients (22.0%) were recommended for an in-person appointment (Figure), 33 (58.9%) of whom ultimately scheduled the in-person appointment, and the median length of time between the completion of the e-consult and the in-person appointment was 16.5 days. The remaining 198 patients (78.0%) were not triaged to receive an in-person appointment following the e-consult,

but 2 patients (8.7%) were ultimately seen in-person anyway via other referral pathways, with a median length of 33 days between e-consult completion and the in-person appointment. One hundred seventy-six patients (69.8%) avoided an in-person dermatology visit, although 38 (21.6%) of those patients were fewer than 90 days out from their e-consults at the time of data collection. The 254 e-consults included patients from 50 different zip codes, 49 (98.0%) of which were in North Carolina.

Comment

An e-consult is an asynchronous telehealth modality through which PCPs can request specialty evaluation to provide diagnostic and therapeutic guidance, facilitate PCP-specialist coordination of care, and increase access to specialty care with reduced wait times.^{7,8} Increased care access is especially important, as specialty referral can decrease overall health care expenditure; however, the demand for specialists often exceeds the availability.⁸ Our e-consult program drastically reduced the time from patients' initial presentation at their PCP's office to dermatologist recommendations for treatment or need for in-person dermatology follow-up.

In our analysis, patients were of different racial, ethnic, and socioeconomic backgrounds and lived across a variety of zip codes, predominantly in central and western North Carolina. Almost three-quarters of the patients resided in zip codes where the average income



Adult and pediatric electronic consultations (e-consults) resulted in reduced frequencies of in-person dermatology appointments.

^a2 patients had 2 separate e-consults regarding different clinical questions.

was less than the North Carolina median household income (\$66,196).⁹ Additionally, 82 patients (32.3%) were uninsured or on Medicaid (eTable). These economically disadvantaged patient populations historically have had limited access to dermatologic care.⁴ One study showed that privately insured individuals were accepted as new patients by dermatologists 91% of the time compared to a 29.8% acceptance rate for publicly insured individuals.¹⁰ Uninsured and Medicaid patients also have to wait 34% longer for an appointment compared to individuals with Medicare or private insurance.² Considering these patients may already be at an economic disadvantage when it comes to seeing and paying for dermatologic services, e-consults may reduce patient travel and appointment expenses while increasing access to specialty care. Based on a 2020 study, each e-consult generates an estimated savings of \$80 out-of-pocket per patient per avoided in-person visit.¹¹

In our study, the most common condition for an e-consult in both adult and pediatric patients was rash, which is consistent with prior e-consult studies.^{5,11} We found that most e-consult patients were not recommended for an in-person dermatology visit, and for those who were recommended to have an in-person visit, the wait time was reduced (Figure). These results corroborate that e-consults may be used as an important triage tool for determining whether a specialist appointment is indicated as well as a public health tool, as timely evaluation is associated with better dermatologic health care outcomes.³ However, the number of patients who did not present for an in-person appointment in our study may be overestimated, as 38 patients' (21.6%) e-consults were conducted fewer than 90 days before our data collection. Although none of these patients had been seen in person, it is possible they requested an in-person visit after their medical records were reviewed for this study. Additionally, it is possible patients sought care from outside providers not documented in the EHR.

With regard to the payment model for the e-consult program, Atrium Health Wake Forest Baptist initially piloted the e-consult system through a partnership with the American Academy of Medical Colleges' Project CORE: Coordinating Optimal Referral Experiences (<https://www.aamc.org/what-we-do/mission-areas/health-care/project-core>). Grant funding through Project CORE allowed both the referring PCP and the specialist completing the e-consult to each receive approximately 0.5 relative value units in payment for each consult completed. Based on early adoption successes, the institution has created additional internal funding to support the continued expansion of the e-consult system and is incentivized to continue funding, as proper utilization of e-consults improves patient access to timely specialist care, avoids no-shows or last-minute cancellations for specialist appointments, and decreases back-door access to specialist care through the emergency department and urgent care facilities.⁵ Although 0.5 relative value units is

not equivalent compensation to an in-person office visit, our study showed that e-consults can be completed much more quickly and efficiently and do not utilize nursing staff or other office resources.

Conclusion

E-consults are an effective telehealth modality that can increase patients' access to dermatologic specialty care. Patients who typically are underrepresented in dermatology practices especially may benefit from increased accessibility, and all patients requiring in-person visits may benefit from reduced appointment wait times. The savings generated by in-person appointment avoidance reduce overall health care expenditure as well as the burden of individual expenses. The short turnaround time for e-consults also allows PCPs to better manage dermatologic issues in a timely manner. Integrating and expanding e-consult programs into everyday practice would extend specialty care to broader populations and help reduce barriers to access to dermatologic care.

Acknowledgments—The authors thank the Wake Forest University School of Medicine Department of Medical Education and Department of Dermatology (Winston-Salem, North Carolina) for their contributions to this research study as well as the Wake Forest Clinical and Translational Science Institute (Winston-Salem, North Carolina) for their help extracting EHR data.

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APPENDIX

Characteristics of Adult and Pediatric E-consult Patients

Patient demographics	Adult e-consults (n=143)	Pediatric e-consults (n=111)
Sex, n (%)		
Male	64 (44.8)	53 (47.7)
Female	79 (55.2)	58 (52.3)
Mean age (range) at e-consult	48.3 y (18–100 y)	6.86 y (3 d–17 y)
Race, ^a n (%)		
White	87 (60.8)	55 (49.5)
Black	33 (23.1)	15 (13.5)
Asian	6 (4.2)	5 (4.5)
Other	17 (11.9)	36 (32.4)
Ethnicity, ^a n (%)		
Hispanic/Latino	12 (8.4)	24 (21.6)
Non-Hispanic/Latino	131 (91.6)	87 (78.4)
PCP reason for e-consult, n (%)		
Rash	74 (51.7)	49 (44.2)
Suspicious lesion	28 (19.6)	14 (12.6)
Other	41 (28.7)	48 (43.2)
Patient insurance type, n (%)		
Uninsured	17 (11.9)	3 (2.7)
Medicaid	13 (9.1)	49 (44.1)
Medicare	36 (25.2)	0 (0)
Private	72 (50.3)	59 (53.2)
Other	5 (3.5)	0 (0)
No. of times in-person appointment recommended	38 (26.6)	18 (16.2)

Abbreviation: PCP, primary care provider.

^aRace/ethnicity data were taken from the electronic health record demographic section. It is unknown how/if this information was collected from patients or reported by the documenting provider.