Telementoring and smartphone-based answering systems to optimize dermatology resident dermoscopy education

Kelly C. Nelson, MD,[a] Jeffrey E. Gershenwald, MD,[b,c,d] Stephanie A. Savory, MD,[e] Janice M. Wilson, MD,[f] Julie M. Simon, MHA,[b] Elizabeth M. Burton, MBA,[b] and Lauren E. Haydu, PhD[b]

Houston, Dallas, and Galveston, Texas

CLINICAL CHALLENGE

Dermoscopic mastery has reduced the number needed to biopsy and enhanced early melanoma detection.[1] Unfortunately, dermoscopy instruction in dermatology residency programs is highly variable and accompanied by a limited evidence base for educational approaches. Postresidency dermoscopy courses are of short duration, with few opportunities for mentorship when challenging cases arise outside of the course structure.

To improve the efficiency and effectiveness of dermoscopy education, we formed a collaborative educational partnership of 8 academic dermatology residency programs across Texas and Missouri, providing monthly live videoconference-based dermoscopy lectures paired with smartphone-based educational assessments. The Project ECHO (Extension for Community Health Outcomes) telementoring platform, which was initially conceived to transfer knowledge regarding hepatitis C management,[2] was adapted to deliver dermoscopy lectures. The dermoscopy curriculum, which is referred to as Dermatology Early Melanoma Detection, or DERM:EMD (mdanderson.org/MelanomaMoonshotPrevention) and was developed de novo by 3 authors (K.C.N., S.A.S., and J.M.W.), included foundational pattern recognition and special site dermoscopy content; overall, each session averaged 84 resident and faculty attendees.

Using the web-based and smartphone-enabled survey tools Kahoot! (http://kahoot.com) and Qualtrics (http://www.qualtrics.com), we evaluated the impact of this educational intervention by conducting (1) monthly content-specific prelecture and postlecture quizzes, (2) quarterly detailed dermoscopy quizzes, and (3) quarterly self-efficacy assessments. These smartphone-enabled survey tools encourage learner engagement in the educational content while also providing metrics on individual participant performance, benchmarks of institutional and program performance, and additional insights into the utility of specific lesion images as

From the Department of Dermatology,[a] Department of Surgical Oncology,[b] and Department of Cancer Biology[c] and the Melanoma and Skin Center, The University of Texas M.D. Anderson Cancer Center, Houston[d]; Department of Dermatology, University of Texas Southwestern Medical Center, Dallas[e]; and Department of Dermatology, University of Texas Medical Branch, Galveston.[f]

Funding sources: Supported by the generous philanthropic contributions of the Lyda Hill Foundation to The University of Texas M.D. Anderson Cancer Center Moon Shots Program.

Disclosure: Dr Gershenwald has served in a consultant/advisory role for Merck, Novartis, Bristol-Myers Squibb, Syndax, and Castle Biosciences, all unrelated to the content of this work. Dr Nelson, Dr Savory, Dr Wilson, Ms Simon, Ms Burton, and Dr Haydu have no conflicts of interest to disclose.

Dr Nelson and Dr Haydu had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Dr Nelson, Dr Savory, Dr Wilson, Dr Gershenwald, Ms Burton, Ms Simon, and Dr Haydu take responsibility for the study concept and design. Dr Nelson, Dr Savory, Dr Wilson, Ms Burton, Ms Simon, and Dr Haydu take responsibility for acquisition, analysis, and interpretation of the data. Dr Nelson and Dr Haydu take responsibility for drafting of the manuscript. Dr Nelson, Dr Savory, Dr Wilson, Dr Gershenwald, Ms Burton, Ms Simon, and Dr Haydu take responsibility for critical revision of the manuscript for important intellectual content. Dr Nelson, Dr Haydu, and Ms Simon take responsibility for statistical analysis. Dr Nelson, Dr Gershenwald, Ms Burton, and Dr Haydu obtained funding. Ms Burton and Ms Simon provided administrative, technical, or material support. Dr Nelson and Dr Haydu take responsibility for study supervision.

Reprint requests: Kelly C. Nelson, MD, 1400 Pressler St, Unit 1452, M.D. Anderson Cancer Center, Houston, TX 77030. E-mail: kcnelson1@mdanderson.org.

J Am Acad Dermatol 2019;81:e27-8.
0190-9622/$36.00

https://doi.org/10.1016/j.jaad.2019.01.045

teaching tools. Development of metric-driven, telementoring-based educational collaborative partnerships provides an opportunity to democratize and enhance dermatology education across broad geographic areas.

REFERENCES

1. Kittler H, Pehamberger H, Wolff K, Binder M. Diagnostic accuracy of dermoscopy. *Lancet Oncol*. 2002;3:159-165.
2. Arora S, Kalishman SG, Thornton KA, et al. Project ECHO: a telementoring network model for continuing professional development. *J Contin Educ Health Prof*. 2017;37(4):239-244.