

Barriers to dermatologic ultrasound: A national survey of dermatologists in the US Veterans Affairs health care system



To the Editor: Dermatologic ultrasound (DUS) can aid in the management of several skin conditions, including evaluation of benign neoplasms, presurgical planning of skin cancers, evaluation and treatment of scarring conditions, staging of inflammatory disorders, and evaluation of cosmetic fillers.^{1,2} In 2016, the Dermatologic Ultrasound group, an international collaboration of physicians, published guidelines to standardize the performance and quality of DUS exams.³ Though guidelines have been published, how dermatologists currently use DUS around the world is unknown.^{3,4} To better understand current use, training needs, and barriers to DUS in the United States, we conducted a national survey of dermatology services in the Veterans Affairs (VA) health care system.

A prospective observational study of all dermatology services at VA medical centers (VAMCs) was conducted between June 2019 and March 2020 using a web-based survey developed by a multidisciplinary group. The survey was first sent to all chiefs of staff ($n = 130$) of VAMCs followed by all chiefs of dermatology to obtain specialty-level data on DUS use, training, workflows, and equipment availability.

All VAMCs with dermatology services were surveyed ($n = 93$), and 87 dermatology chiefs completed surveys (94% response rate). Among the 87 dermatology chiefs who responded, only one (1.1%) indicated current use of DUS by their group for foreign body examination, bursa injection, venous malformations, and cysts. Lack of training was a top barrier to DUS use (Table I), and 40% of dermatology chiefs would support either sending their dermatologists to attend a national ultrasound course or an onsite training course at their facility. Only 9% of chiefs were aware of specific training opportunities available in DUS. Two chiefs (2.3%) reported desire for training in specific diagnostic applications, including evaluation of cellulitis, foreign bodies, abscess, neck mass, and lymph nodes, and procedural guidance for bursa injections, abscess drainage, and treatment of venous malformations. No dermatology chiefs reported existing

Table I. Barriers to dermatologic ultrasound use per dermatology chiefs in the Veterans Affairs health system

Barrier	Number of dermatology chiefs reporting barrier (N = 87)
Training	
Lack of trained providers	32 (37%)
Lack of funding for training	15 (17%)
Lack of training opportunities	14 (16%)
Lack of funding for travel	8 (9%)
<i>At least one of the training barriers listed above</i>	32 (37%)
Equipment	
Lack of ultrasound equipment	26 (30%)
Lack of funding for US equipment	15 (17%)
<i>At least one of the equipment barriers listed above</i>	26 (30%)
Infrastructure	
No clinician champion	18 (21%)
Lack of funding for support staff	15 (17%)
Lack of funding for simulation space	10 (11%)
Lack of privileging criteria	9 (10%)
Lack of facility leadership support	7 (8%)
Lack of image archiving	7 (8%)
Lack of standard reporting form	6 (7%)
<i>At least one of the infrastructure barriers listed above</i>	23 (26%)
Other	
No barriers identified	12 (14%)
No perceived benefit or no/limited utility for dermatology	59 (68%)

policies on DUS use, equipment maintenance, or image archiving.

The main limitation of our data is dermatology services only in the VA health care system were surveyed. However, our data represent dermatology practices in urban, rural, community, and academic settings since the VA is the largest integrated health care system in the United States and is staffed by dermatologists who practice in both VA and non-VA facilities.

Despite the potential benefits, few dermatologists currently use DUS due to lack of training, equipment, or infrastructure. Most important, lack of awareness of the clinical applications and potential benefits of DUS is a critical initial barrier to use as demonstrated by 68% of dermatology chiefs responding that there was little benefit or utility for ultrasound in dermatology. Other comments from dermatology chiefs included, “We would be interested in learning more if this is an evolving technology that could improve our practice.” To address the training gap, the Dermatologic Ultrasound group published basic, intermediate, and advanced curricula to help dermatologists learn DUS around the world.^{3,5} However, hands-on training courses are scarce and limited geographically to a few countries that have clinicians with expertise in DUS.

DUS has unique utility in the management of skin conditions and has gained interest internationally. Currently, few dermatologists use DUS in the United States, primarily due to lack of training. Development of hands-on DUS training courses is needed to facilitate implementation into practice by dermatologists worldwide.

Ariadna Perez-Sanchez, MD,^a Pavela G. Bambekova, MD,^b Joshua L. Owen, MD, PhD,^{b,c} Michael Mader, MS,^d Ximena Wortsman, MD,^e and Nilam J. Soni, MD, MS^{a,f}

From the Department of Medicine, University of Texas Health San Antonio, San Antonio, Texas^a; Department of Dermatology, University of Texas Health San Antonio, San Antonio, Texas^b; Dermatology Service, South Texas Veterans Health Care System, San Antonio, Texas^c; Research Service, South Texas Veterans Health Care System, San Antonio, Texas^d; Department of Dermatology, Faculty of Medicine, Universidad de Chile, Santiago, Chile^e; and Medicine Service, South Texas Veterans Health Care System, San Antonio, Texas^f

Funding sources: Nilam J. Soni receives funding from the U.S. Department of Veterans Affairs (VA), United States, Quality Enhancement

Research Initiative (QUERI), United States Partnered Evaluation Initiative Grant (HX002263-01A1) and the VA National Center for Patient Safety, United States. The contents of this publication do not represent the views of the US Department of Veterans Affairs or the US Government.

IRB approval status: This study was reviewed by the Investigational Review Board of the University of Texas Health Science Center San Antonio and deemed to be nonresearch (protocol number: HSC20210630NRR).

Patient consent: Not applicable.

Key words: dermatologic ultrasound; dermatology; point-of-care; sonography.

Correspondence to: Nilam J. Soni, MD, MSc, Medicine Service, South Texas Veterans Health Care System, 7400 Merton Minter Blvd, San Antonio, TX 78229

E-mail: sonin@uthscsa.edu

Twitter handle: @nilamjsoni

Conflicts of interest

None disclosed.

REFERENCES

1. Wortsman X. Practical applications of ultrasound in dermatology. *Clin Dermatol*. 2021;39(4):605-623. <https://doi.org/10.1016/j.clindermatol.2021.03.007>
2. Almuhanha N, Wortsman X, Wohlmuth-Wieser I, Kinoshita-Ise M, Alhusayen R. Overview of ultrasound imaging applications in dermatology. *J Cutan Med Surg*. 2021;25(5):521-529.
3. Wortsman X, Alfageme F, Roustan G, et al. Guidelines for performing dermatologic ultrasound examinations by the DERMUS Group. *J Ultrasound Med*. 2016;35(3):577-580. <https://doi.org/10.7863/ultra.15.06046>
4. Alfageme F, Wortsman X, Catalano O, et al. European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) position statement on dermatologic ultrasound. *Ultraschall Med*. 2021;42(1):39-47. <https://doi.org/10.1055/a-1161-8872>
5. Wortsman X, Alfageme F, Roustan G, et al. Proposal for an assessment training program in dermatologic ultrasound by the DERMUS Group. *J Ultrasound Med*. 2016;35:2305-2309.

<https://doi.org/10.1016/j.jdin.2022.08.019>