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## Delivering high-quality vascular care by telehealth during the COVID-19 pandemic

Grant T. Fankhauser, MD, MBA, MHA, FACS, FSVS, *Galveston, Tex*

The COVID-19 pandemic has brought sweeping change to the delivery of health care throughout the United States and other parts of the world. Local, county, and state governments have implemented policies recommending or requiring broad swaths of the population to stay at home except for essential activities. Not only does this affect our patients, but in many cases it affects our physicians, residents, nurses, technologists, and support staff. Major health systems have already converted many job functions to work-from-home. Outpatient clinics have been closed, and elective or semielective procedures have been postponed or canceled. The Society for Vascular Surgery has released guidance as to which procedures should be postponed.<sup>1</sup> We do not yet know how much stress the pandemic will put on the U.S. health care system, but most hospitals and health care systems have wisely adopted a strategy to prepare for the worst.<sup>2</sup>

Many health care systems and clinics have converted existing outpatient clinic visits to telehealth visits. The Centers for Medicare and Medicaid Services (through the 1135 waiver) and most major commercial insurance companies have relaxed the restrictions on payment for virtual services during this pandemic.<sup>3</sup> Options are now available to conduct virtual visits through various technology options including videoconferencing, smart phones, and even landlines. Outside of health crises, these methods have proven successful in the care of vascular patients.<sup>4,5</sup> Obviously, there are limitations on the information available to the physician. In telehealth, only limited physical examination is possible, even with video services. Even the most basic tools from the vascular clinic, such as blood pressure cuffs, handheld Doppler probes, or physical touch, are not available

during virtual visits, but plenty of information is accessible to help maintain our delivery of high-quality care.

Virtual visits are an opportunity to sharpen our history-taking skills. Physical examination, vascular laboratories, and computed tomography are often employed to arrive at a diagnosis, but a thorough history may provide us with much of the same information. A careful history can differentiate neurogenic from vascular claudication, even without palpating pulses. A history can also differentiate limb ischemia from venous congestion for patients complaining of blue toes. A thorough history, with targeted inquiries and follow-up questions, can steer us to the correct diagnosis much of the time.

True, a formalized treatment plan is unlikely to arise from a new patient virtual visit, but it may provide the next steps, such as lifestyle modification and a walking plan or compression socks and leg exercises. Virtual visits will not obviate the need for in-person evaluation of some patients, and vascular emergencies will continue to arise for patients at home or hospitalized. We must continue to be ready for those situations.

If we effectively use virtual visits to stay in contact with our patients during this pandemic, we can triage those who need a face-to-face visit or diagnostic tests while providing outpatient treatment plans for others. The patient's ability to speak to his or her vascular surgeon during this health crisis provides reassurance and maintains the continuity of care we cherish and build with our patients.

This health crisis will pass, and we will soon return to our normal practices. Our patients look forward to that day as much as we do. While we weather the storm, technology and virtual visits can help us maintain the high-quality care we pride ourselves in delivering.

From the Division of Vascular Surgery, University of Texas Medical Branch.

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Correspondence: Grant Fankhauser, MD, Division of Vascular Surgery, University of Texas Medical Branch, 301 University Blvd, Galveston, TX 77555 (e-mail: [grant.fankhauser@utmb.edu](mailto:grant.fankhauser@utmb.edu)).

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### REFERENCES

1. SVS vascular surgery triage guidelines by tier class. Available at: <https://vascular.org/sites/default/files/Vascular%20surgery%20triage%20by%20Tier%20Class%203.24.20.pdf>. Accessed March 27, 2020.
2. Centers for Disease Control and Prevention. Comprehensive hospital preparedness checklist for coronavirus disease 2019 (COVID-19). Available at: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/hcp-hospital-checklist.html>. Accessed March 27, 2020.
3. Centers for Medicare and Medicaid Services. List of telehealth services. Available at: <https://www.cms.gov/Medicare/>

- Medicare-General-Information/Telehealth/Telehealth-Codes. Accessed March 26, 2020.
4. Paquette S, Lin JC. Outpatient telemedicine program in vascular surgery reduces patient travel time, cost, and environmental pollutant emissions. *Ann Vasc Surg* 2019;59:167-72.
  5. Hornick JR, Balderman JA, Eugea R, Sanchez LA, Zayed MA. A telephone call 1 week after hospitalization can identify risk factors for vascular surgery readmission. *J Vasc Surg* 2016;64:719-25.

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