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EDITORIAL COMMENT

Look After You Leap*



David J. Whellan, MD, MHS

When the COVID-19 pandemic surged across the United States in March 2020, health care systems, providers, and patients pivoted to telehealth to keep patients safe and away from public spaces like clinics and hospitals. This change in health care delivery was an unprecedented event in modern history. We were fortunate to have the necessary tools and technologies available, but never had they been used so quickly or on such a massive scale. In many ways, we were flying blind. Consistent with quality improvement procedures, it is important to continually assess the new strategy and consider modifications that can lead to better results.

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In this issue of *JACC: Heart Failure*, Sammour et al (1) review the changes to HF care during COVID-19 and assess the impact of those changes in a large Midwestern health care system. Their retrospective analysis compares the care provided by a cardiology group (66 cardiologists and 47 advance practice providers) over the initial 3 months of the pandemic (March 15 to June 15, 2020) with prepandemic care of patients with HF during the same months in 2018 and 2019, representing approximately 5,000 visits for each time period. The cardiology practice pivoted almost 180 degrees in 2020, going from no telehealth visits to approximately 88.5% in 2020. The investigators concluded that telehealth visits provided an effective substitute for in-person office visits. In

the propensity-matched analysis, patients with HF cared for by telehealth had lower emergency department visits or hospitalizations at 30 and 90 days than did similar patients seen in person, with similar intensive care unit admissions and deaths.

Before using telehealth as the new HF management strategy, we may want to note some significant limitations of the current analysis. First and foremost is that it looks at only 3 months of care. HF is a chronic disease that requires ongoing interactions with patients, management of therapies, and consideration of new strategies. As noted by the authors, they have not provided any information on the management of guideline-directed therapies. Three months may not be enough time to understand the impact on clinical events or survival, particularly if there were no adjustment to guideline-directed therapies. Adjusting a diuretic dose in response to worsening symptoms in order to avoid decompensation has short-term benefits, but the long-term effects of high diuretic doses are unclear (2).

For many reasons, including ethical and logistical, these results do not reflect the outcomes from the traditional criterion standard of a randomized controlled trial. The investigators attempted to account for this by using a propensity-matched cohort, but they recognize that there are limitations to this approach. The telehealth cohort represented a selected group of patients, and that choice likely inserted bias into the analysis. In addition, several components were not considered in the analysis, including the type of provider or the method of telehealth visit. The current analysis involved a single practice group committed to using the technology because of the critical situation, which indicates that they were prepared to interact with patients and provide care through the platform.

These results may have differed if the analysis had been conducted across several practices during more normal circumstances. There are several examples in randomized controlled studies in which participating

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From the Division of Cardiology, Department of Medicine, Thomas Jefferson University, Philadelphia, Pennsylvania, USA.

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investigators and sites do not use the data being provided (3) or do not close the loop by providing appropriate changes in treatment (4,5), either by not responding to data or by overreacting to alerts. This may be due in part to feeling constrained by protocols that dictate adjustments. In the current article, providers used the information as they wished, integrating the information obtained with their knowledge about their patients, including the success of previous medication adjustments. Access to a technology platform is the intervention being evaluated; there were not protocols for adjusting medications.

Providers and practices considering the implementation of a telehealth strategy, particularly video visits, will need to consider barriers to access for both in-person and telehealth visits. Studies have consistently found that younger patients and those who speak English feel more comfortable with telehealth visits (6,7). In addition, patients are more likely to select telehealth visits when in-person visits have higher out-of-pocket costs (eg, parking charges or clinic copayments) or greater time commitment (eg, travel time) (6). Inasmuch as HF is a disease of the elderly, the consistent finding that older age is associated with less access to the internet and delayed

adoption of technology, including digital health, is an issue that needs to be addressed. Even more, patients are less likely to participate in telehealth visits if they have low household income or, as in the current study, have Medicaid coverage.

Although this pandemic has inflicted a significant amount of pain and suffering on the world, there are small benefits that we can appreciate. One is that humans are an immensely adaptable group, ready to use what is available to solve a problem. Telehealth was an available technology, and by using it as broadly as we did during the pandemic, we have likely altered the way medicine will be practiced from now on. There is no going back; we have leapt. Yet, this is not the time to go blindly into this new paradigm. We need to continue to evaluate and adjust.

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ADDRESS FOR CORRESPONDENCE: Dr David J. Whellan, Jefferson Medical College, Department of Medicine, 2400 Pratt Street, Durham, North Carolina 27705, USA. E-mail: david.whellan@jefferson.edu.

REFERENCES

1. Sammour Y, Spertus JA, Austin BA, et al. Outpatient management of heart failure during the COVID-19 pandemic after adoption of a telehealth model. *J Am Coll Cardiol HF*. 2021;9:916-924.
2. Hasselblad V, Gattis Stough W, Shah MR, et al. Relation between dose of loop diuretics and outcomes in a heart failure population: results of the ESCAPE trial. *Eur J Heart Fail*. 2007;9:1064-1069.
3. Fiuat M, Ezekowitz J, Alemayehu W, et al. Assessment of limitations to optimization of guideline-directed medical therapy in heart failure from the GUIDE-IT trial: a secondary analysis of a randomized clinical trial. *JAMA Cardiol*. 2020;5:757-764.
4. Loh JP, Barbash IM, Waksman R. Overview of the 2011 Food and Drug Administration Circulatory System Devices Panel of the Medical Devices Advisory Committee Meeting on the CardioMEMS Champion Heart Failure Monitoring System. *J Am Coll Cardiol*. 2013;61:1571-1576.
5. van Veldhuisen DJ, Braunschweig F, Conraads V, et al. Intrathoracic impedance monitoring, audible patient alerts, and outcome in patients with heart failure. *Circulation*. 2011;124:1719-1726.
6. Reed ME, Huang J, Graetz I, et al. Patient characteristics associated with choosing a telemedicine visit vs office visit with the same primary care clinicians. *JAMA Netw Open*. 2020;3:e205873.
7. Eberly LA, Kallan MJ, Julien HM, et al. Patient characteristics associated with telemedicine access for primary and specialty ambulatory care during the COVID-19 pandemic. *JAMA Netw Open*. 2020;3:e2031640.

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