Telemedicine had a potential use for improving efficiency and delivery of cancer care that remained unrealized until the COVID-19 pandemic. Supported by a convergence of risk of infection that led to a need to prioritize remote visits and a legislative environment that lowered barriers of reimbursement and interstate licensure for telemedicine, oncology practices in many health care systems rapidly converted to telemedicine, variably defined as video-based or audio only. These early experiences were generally characterized as successful, with the qualifier that telemedicine has been perceived as more appropriate for some clinical scenarios than for others. Alongside this theme, it has become clear that some subsets of patients are better equipped for telemedicine than are others. The limitations have sometimes been associated with age-, communication-, and/or sensory-related disabilities; societal factors such as education, wealth, and insurance status; and poor health and comorbidities. The net result is that many of the patients who are in greatest need of assistance are likely to be those least capable of availing themselves of telemedicine.

Waseem and colleagues conducted a retrospective analysis of the demographic features of patients treated for thoracic cancer in the outpatient setting at Johns Hopkins Medical Institute during the first few months of the COVID-19 pandemic (March 1 to July 17, 2020); specifically, they assessed patient characteristics associated with successful completion of telemedicine visits, defined as a video-based encounter that was not a no-show visit and did not revert to a telephone-based encounter. In addition, the authors evaluated the association of successful completion of these telemedicine encounters with clinical outcomes, such as odds of emergency department (ED) and urgent care visits, hospitalization, and death. Overall, 57% of the telemedicine visits were successful, and the probability of success was significantly lower among patients who were Black, had Medicaid, or lived in a zip code designated as having higher rates of cancer mortality. Of note, having had at least 1 unsuccessful telehealth visit was associated with a significantly higher probability of visiting the ED or an urgent care center or of hospitalization. In terms of clinical characteristics, patients starting a new cancer therapy were more likely to have either an in-person visit or a successful telemedicine visit.

Although these are important observations, it is important to question whether a telephone-based visit truly represents a failed telemedicine encounter and should serve as the cornerstone of an analysis assessing associations with patient demographics and clinical outcomes. A video-based encounter provides an opportunity for richer communication than does a telephone-based visit, but it is dubious to designate the success of telemedicine in binary terms. Expert oncologists perceive oncology care as a spectrum of need for a strong interpersonal connection; although they have reported that in-person visits are preferable to video- or telephone-based visits for establishing a connection with a patient or family or assessing complications of cancer therapy, they have also stated that both video-based and telephone-based visits are as good as or better than in-person clinic visits to review benign or reassuring data or to perform follow-up for patients receiving surveillance or maintenance therapy. Telemedicine is not the right tool for every job, but neither is in-person care; by the same token, telephone-based care is well suited for some tasks, constituting a legitimate if not always ideal component of telemedicine. I remain unconvinced that a telephone-based telemedicine visit represents a fundamental failure to be categorized the same as a no-show visit, as was done in the analysis by Waseem and colleagues.
We must acknowledge that many factors may limit our ability to complete a video-based telemedicine visit that are, at most, tenuously related to the health status of a patient. The ability to complete a video-based visit is predicated on each participant possessing a fast and reliable internet connection, hardware, an appropriate setting (light, sound, and space), technical and communication skills, and sensory function, ideally paired with an intuitive video platform. Despite my strong advocacy for telemedicine and my at least reasonable competency with basic technology (by the standard of someone now receiving AARP mailings, if not by loftier standards of most adolescents), I have encountered innumerable ways for video-based encounters to fail, from the virtual private network–restricted telemedicine application not recognizing my webcam to patients not having sufficient instructions or links available to them. Unfortunately, video-based telemedicine entails a long series of potential pitfalls and requires exponentially more infrastructure and commitment by all participants than does telephone-based care; this is precisely why telephone-based care is easier to execute, particularly for patient populations prone to finding video-based telemedicine challenging. This is not to say that video is not preferable to audio only, but rather that reasons for failure may be multifactorial, creating a threshold for disparities with video that is lower than that for telephone-based care.

It is also telling that the measured factor with the greatest variability in successful completion of video-based telemedicine in the study by Waseem and colleagues was the month of the visit, with a more than 30-fold higher success rate in April or May 2020 than in March. Such a conditional variable suggests that issues such as the perceived appropriateness of the patient for a telemedicine visit, the risk of infection in the region, the institutional support and reimbursement rates for telemedicine, and other societal and environmental factors are likely more critical factors associated with telemedicine practices than are patient-specific characteristics. The fundamental attribution error in psychology—that people's behaviors are misattributed to engrained personality traits when they are more often dictated by situational circumstances—may also apply well to telemedicine practices.

Because the analysis by Waseem and colleagues was retrospective without temporal associations, the patterns of association of clinical outcomes with success of video-based telemedicine are open to interpretation. The study analyzed telemedicine's association with clinical outcomes; thus, we cannot infer a cause and effect relationship from the associations of successful completion of video-based telemedicine visits with ED visits and hospitalizations. Both of these measures may be epiphenomena associated with other social and medical factors, such as social determinants of health that are closely correlated with patterns of ED use. For that matter, patients may have been unable to pursue a telemedicine visit because they were in the ED or hospital, an explanation as plausible as the failure of a video-based visit being directly associated with a patient's needing urgent medical support.

These caveats aside, the study by Waseem and colleagues represents an important step in the evolution of the field of telemedicine because it seeks to address the questions of which patients are well or poorly served by current models of telemedicine delivery and whether successful delivery of telemedicine is associated with distinct profiles of clinical outcomes. This is a valuable evolution beyond the first phase of descriptive, observational data demonstrating that telemedicine was feasible and became more commonly used with the onset of the COVID-19 pandemic. Researchers may now be compelled to continue to refine definitions of success and failure, identify and measure the magnitude of the disparities in delivery of telemedicine, and assess with better temporal resolution whether these disparities are predictive of differential clinical outcomes. Only with these steps can we mitigate the disparities identified and optimize oncology care via telemedicine longitudinally.
REFERENCES


