



Advantages and utilization of telemedicine

In this issue, several research groups outline the advantages of telemedicine for multiple specialties. The authors explore the various reasons for telemedicine utilization and offer suggestions to increase the delivery of high-quality telemedicine services.

Williams *et al.* analyze the barriers to the expansion of telemedicine in postoperative care, in addition to explaining its history and benefits. These barriers are present at both the federal and state levels. Current licensure and healthcare practice laws mandate that providers practice in the state where the patient is located. In recent years, some states have introduced cross-state licensing, and the Federation of State Medical Boards has taken the progressive view that physicians licensed in any state should be free to practice in any other state, while allowing individual states to maintain rules for sanctioning. This innovative approach will allow the underserved a better opportunity to receive the quality care they deserve.

Economics is another barrier to the expansion of telemedicine. Not all states require state-regulated health plans to reimburse telemedicine visits. In addition, some states require that a healthcare professional accompany a patient during the visit, that a patient be physically present in a medical facility or in a physician's office during evaluation, and that patients provide written consent to the provider before receiving care. Requiring two providers to be present during a telemedicine encounter is counter-productive and drastically reduces the ability of telemedicine to provide affordable quality care to the underserved.

Fortunately, there has been progress. In May 2017, the bipartisan Congressional Telehealth Caucus reintroduced several bills aimed at addressing Medicare barriers impeding telemedicine efforts; these include an expansion of the scope of reimbursed services along with redefining rural qualifications. Some major commercial payers, including United Healthcare and Blue Cross Blue Shield, have recently waived their origination site requirement and now allow for reimbursement of in-home video visits.

Modi *et al.* carefully evaluate the differences in telemedicine utilization in non-risk bearing Accountable Care Organizations (ACO). They found that even though telemedicine is increasingly used in the Medicare program, ACO-participating providers conducted disproportionately fewer telemedicine visits than non-ACO providers. ACOs are obliged to be aware of the cost benefits of any care delivery system; therefore, the authors concluded that "risk-bearing ACOs seem to be an ideal laboratory for CMS to understand the utilization of telemedicine services."

Goldenthal *et al.* described the use of a chatbot to enable rapid communication with patients who underwent a ureteroscopy for stone. A chatbot is defined as "*a computer program designed to simulate conversation with human users, especially over the Internet.*" Although the sample size of users was small (seven users out of 20 patients recruited), their results suggest that "*chatbots are a convenient method to address common concerns post-ureteroscopy. However, better integration in the flow of care delivery and improved usability are needed to increase patient engagement.*"

In their paper, "Evaluating the Patient Experience With Urological Video Visits at an Academic Medical Center", Thelen-Perry *et al.* report that patients were pleased with their urological video visit experience. Moreover, they gained deeper understanding of their workflow than would have been evident without interviews. Their findings suggest that while video visits are suitable alternatives to in-clinic appointments at academic medical centers, "it is important for providers to obtain direct feedback from patients to identify workflow and technical issues."

Prostate cancer is the most common cancer diagnosed in America. In 1971, there were an estimated 3 million cancer survivors; in 2012 this number grew to 13.7 million. Considering there are approximately 225,000 men diagnosed each year and nearly 100% survive at least five years, the numbers will grow significantly. In their paper, "Telemedicine and Prostate Cancer Survivorship: A Narrative Review", Agochukwu *et al.* conclude that "*telemedicine interventions for prostate cancer survivors in their various formats have demonstrated value for prostate cancer survivorship outcomes. They are especially advantageous for underserved populations, such as survivors for whom distance, cost, and time away from work can pose insurmountable barriers. For the healthcare system, telemedicine can also provide cost savings.*"

Dr. Boxer offers tele-urology clinical care each week in a Veterans Affairs hospital, diagnosing and treating a range of urological conditions, including impotence and genitourinary malignancies. The satisfaction rate is nearly 100% and Dr.

Boxer has received numerous awards for patient care. He continually encourages his colleagues within and outside academia to expand the use of telemedicine. Likewise, Dr. Ellimoottil performs telemedicine visits with patients who have low-complexity follow-up (e.g., medication follow-up, metabolic kidney stone counseling, kidney stone and cancer surveillance). Often these patients do not require a physical exam.

It is encouraging to see growing evidence of telemedicine's effectiveness; however, more research is needed on telemedicine's impact on cost, quality, access, and patient experience. There is no doubt that telemedicine will increase in popularity. Thus it is incumbent on the research community to ensure that the delivery of telemedicine occurs in an evidence-based manner.

Telemedicine not only represents the future of medical practice; it is, at present, a primary means of expanding care to those with limited access to physicians. Requiring patients to come to a brick-and-mortar facility for care is becoming increasingly unrealistic and unsustainable. To be truly patient-centered, healthcare must be affordable and accessible. Because the ground is fertile for the growth of telemedicine, clinical, administrative, and research communities should align to expand the use of telemedicine to our deserving patient population.

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