Telemedicine in the COVID-19 era

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Unprecedented, the COVID-19 pandemic has impacted healthcare. Organizations have rapidly adapted to serve patients, provide safe environments, and maintain clinical operations.

Telemedicine and telehealth have emerged as instrumental in minimizing physical contact, respecting distancing practices, and delivering quality care.

The COVID-19 pandemic presents an unprecedented challenge to every National Health Systems. As the need to appropriately direct all efforts towards providing emergency supportive care to those suffering, there is being a knee-jerk tendency to cancel all outpatient activity.

Telemedicine allows for the provision of healthcare remotely utilizing electronic communication tools. A virtual clinic is a form of telemedicine between healthcare professionals and patients that crucially occurs without the need for a traditional face-to-face (FTF) consultation and thus avoids in-person attendance to hospital.¹⁾.

Telehealth follow-up alternatives may be safely offered to patients after brain tumor surgery, thereby reducing patient burden in those with longer distances to the hospital or special situations as the COVID-19 pandemic²⁾.

Elective use of telehealth was highest in gastroenterology, urology, neurology, and neurosurgery and lowest in ophthalmology. Asynchronous testing was combined with 126 teleophthalmology encounters, resulting in a change in clinical management for 32 patients (25.4%) and no change for 91 (72.2%)³⁾.

Patients with a diagnosis of a movement disorder consider telemedicine as a convenient and potential tool for health services with a high level of satisfaction $^{4)}$

Telehealth increased across various specialties during the COVID-19 pandemic ⁵⁾.

The lack of access to care during the pandemic has forced patients and doctors to rapidly implement telemedicine. The use of phone videos and smart telemedicine is helping to treat patients during this pandemic and is becoming the standard of care. Investment in infrastructure is important to make sure patients can have access to care even during a pandemic ⁶.

The coronavirus disease 2019 (COVID-19) heralded an unprecedented increase in telemedicine utilization.

Telemedicine has many patient-centered benefits, demonstrating that for certain elective subspecialty clinics, telemedicine may be utilized as the preferred method for surgical consultations. However, to ensure the equitable adoption and advancement of telemedicine services, healthcare providers will need to focus on mitigating the socioeconomic barriers to telemedicine participation ⁷⁾.

Kitov BD, Davarski AN, Kitova TT, Kilova KP. Letter: Telemedicine in Neurosurgery: Lessons Learned From a Systematic Review of the Literature for the COVID-19 Era and Beyond. Neurosurgery. 2021 Jun 16:nyab215. doi: 10.1093/neuros/nyab215. Epub ahead of print. PMID: 34133745.

The use of telemedicine drastically increased across all 4 divisions within the Neurosurgery Department, Thomas Jefferson University, and Jefferson Hospital for Neuroscience, Philadelphia, Pennsylvania, with a significant increase in online-first encounters in order to meet the needs of our patients once the shelter-in-place measures were implemented. Mouchtouris provided a detailed account of the lessons learned and discuss the anticipated role of telemedicine in surgical practices once the shelter-in-place measures are lifted⁸⁾

The objective of Rodrigues et al. from Stanford was to assess patient satisfaction with telemedicine during the COVID-19 era.

Telemedicine visit data were gathered from Stanford Health Care (Stanford) and the Hospital for Special Surgery (HSS). Patient satisfaction data from HSS were captured from a Press-Ganey questionnaire between April 19, 2020, and December 12, 2020, whereas Stanford data were taken from a novel survey instrument that was distributed to all patients between June 22, 2020, and November 1, 2020. Participants: There were 60,550 telemedicine visits at Stanford, each linked with a post-visit survey. At HSS, there were 66,349 total telemedicine visits with 7,348 randomly linked with a post-visit survey. Main Outcomes and Measures: Two measures of patient satisfaction were used for this study: (1) a patient's "overall visit score" and (2) whether the patient indicated the highest possible "likelihood to recommend" (LTR) score (LTR top box score). Results: The LTR top box percentage at Stanford increased from 69.6% to 74.0% (p = 0.0002), and HSS showed no significant change (p = 0.7067). In the multivariable model, the use of a cell phone (adjusted odds ratio [aOR]: 1.18; 95% confidence interval [CI]: 1.12-1.23) and tablet (aOR: 1.15; 95% CI: 1.07-1.23) was associated with higher overall scores, whereas visits with interrupted connections (aOR: 0.49; 95% CI: 0.42-0.56) predicted lower patient satisfaction.

They presented the largest published description of the patient satisfaction with telemedicine, and they identify important telemedicine-specific factors that predict increased overall visit score. These include the use of cell phones or tablets, phone reminders, and connecting before the visit was scheduled to begin. Visits with poor connectivity, extended wait times, or difficulty being seen, examined, or understood by the provider were linked with reduced odds of high scores. The results suggest that attention to connectivity and audio/visual definition will help optimize patient satisfaction with future telemedicine encounters⁹.

Telemedicine instead of visiting the Emergency Department

A central strategy for health care surge control is "forward triage" — the sorting of patients before they arrive in the emergency department (ED). Direct-to-consumer (or on-demand) telemedicine, a 21st-century approach to forwarding triage that allows patients to be efficiently screened, is both patient-centered and conducive to self-quarantine, and it protects patients, clinicians, and the community from exposure. It can allow physicians and patients to communicate 24/7, using smartphones or webcam-enabled computers. Respiratory symptoms — which may be early signs of COVID-19 — are among the conditions most commonly evaluated with this approach. Health care providers can easily obtain detailed travel and exposure histories.

Disasters and pandemics pose unique challenges to health care delivery. Though telehealth will not solve them all, it's well suited for scenarios in which infrastructure remains intact and clinicians are available to see patients ¹⁰.

Dealing with oncologic patients

There are, of course, moral and ethical considerations regarding delivering a primary diagnosis of cancer in such a manner, without the usual support of specialists. Such patients may not be suitable for telemedicine consultations and individual clinicians must be able to make an appropriate judgment. However, plenty of patients are in need of imaging prescriptions or require advice in preparation for definitive treatment. All will greatly benefit from such virtual clinic consultations over a cancellation.

With regard to patients with benign disease, that may have a significant negative impact on qualityof-life, this ought to be stratified in terms of priority and patients be offered such services if clinician capacity allows.

Pandemics pose a challenge to all involved in the delivery of healthcare. However, utilizing a targeted virtual clinic approach will keep the pathway moving for patients with high-risk malignancies and enable doctors to resume services in a much-improved position.¹¹

Is telemedicine comparable to face-to-face consultations?

In 2019 Hammersley et al conducted a non-randomized study to explore telemedicine possibilities. Primary care clinicians were provided with video-consulting equipment. Participating patients required a smartphone, tablet, or computer with a camera. Clinicians invited patients requiring a follow-up consultation to choose a VC, TC, or FTFC. Consultations were audio-recorded and analyzed for content and quality. Participant experience was explored in post-consultation questionnaires. Of the recordings, 149/163 were suitable for analysis. Video recording consultations (VCs) recruits were younger, and more experienced in communicating online. Face-to-face consultations (FTFCs) were longer than VCs or Telephone consultations (TCs). On average, patients raised fewer problems in VCs compared with FTFCs and demonstrated fewer instances of information giving by clinicians and patients. FTFCs scored higher than VCs and TCs on consultation-quality items. VC may be suitable for simple problems not requiring physical examination. VC, in terms of consultation length, content, and quality, appeared similar to TC. Both approaches appeared less 'information rich' than FTFC. Technical

problems were common and, though patients really liked VC, infrastructure issues would need to be addressed before the technology and approach can be mainstreamed in primary care.¹²⁾

Neurosurgery and Telemedicine in the United States

Kahn et al reviewed general and peer-reviewed literature as it relates to telemedicine and neurosurgery, with particular attention to best practices, relevant state and federal policy conditions, economic evaluations, and prospective clinical studies. Despite technologic development, growing interest, and increasing reimbursement opportunities, telemedicine's utilization remains limited because of concerns regarding an apparent lack of need for telemedicine services, lack of widespread reimbursement, lack of interstate licensure reciprocity, lack of universal access to necessary technology, concerns about maintaining patient confidentiality, and concerns and limited precedent regarding liability issues. Results demonstrated substantial cost savings and patient satisfaction with remote care for chronic neurologic conditions. Overall, the economic and clinical benefits of telemedicine will likely come from 1) diminished travel times and lost work time for patients; 2) remote consultation of subspecialty experts, such as neurosurgeons; and 3) remote consultation to assist with triage and care in time-sensitive scenarios and will become more relevant to neurosurgical patient care. We favor proceeding with legislation to reduce barriers to telemedicine's growth.¹³

After analyzing the patient-perceived scores of telemedicine (TM) after elective neurosurgery in 1200 patients, Thakar et al concluded that TM care dominates the in-person care strategy by providing more effective and less expensive follow-up care for a remote post-neurosurgical care population in India. In the authors' setting, this benefit of TM is sustainable even if half the TM consultations turn out to be unsuccessful. The viability of TM as a cost-effective care protocol is attributed to a combination of factors, like an adequate patient volume utilizing TM, patient utility, success rate of TM, and the patient travel distance.¹⁴⁾

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