EDITORIAL

Neurosurgical healthcare delivery quality and “where we go from here” after the pandemic

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THE coronavirus pandemic started in December 2019 and spread quickly around the world.¹ People's lives changed. People learned to work from home. Videoconferencing, which previously had a large barrier to adoption, reached a high adoption rate—and quickly—because in-person meetings were no longer an option.² Healthcare workers did not abandon their duties when it meant that going to work could cost them their lives; nurses, physicians, and custodial workers masked up and went to work. People did not see family for over a year and, during that time, lost family without being able to say “goodbye.” But if the cost of the coronavirus pandemic was on the scale of actual lives lost, we should endeavor to look as hard as we can at the possible lessons learned from our time in the pandemic that can make lives better. This editorial is an expository application of “Remote video-based outcome measures of patients with Parkinson's disease after deep brain stimulation using smartphones: a pilot study,” by Xu et al.,³ to what neurosurgery quality might look like in the future.³

Time Spent With the Patient

In the pandemic, my academic office practice, like that of many others, transitioned to 100% telemedicine for the safety of patients and providers. There were no accommodations made for anticipated time differences for how long a telemedicine visit would take compared with an in-person visit. Would telemedicine take longer? Would telemedicine take less time? I quickly learned how the two types of visits are different. An in-person visit at 9 AM might mean I am seeing the patient at 9:30 or 10 AM because traffic was bad or because the medical assistant ran late with taking vitals. A 9 AM telemedicine visit means Mr. and Mrs. Patient are both sitting at the kitchen table with their coffees and the second the clock strikes 9 AM, they expect the phone to ring. It is a very different expectation of not just when the visit will begin, but how much

time it will take. I assumed telemedicine would be a shorter visit. I was very surprised to find that the patient, comfortable in his or her home, with the family they need to support them, was wanting to spend more time going over their issues. Xu et al.³ looked at the impact of telemedicine on a group of 22 patients who had deep brain stimulation (DBS) for PD. A physician assistant did the telemedicine visit follow-ups. Patients in the study were satisfied overall with the time spent on the visits and the quality of the visits. Would it be surprising that a patient with a neurodegenerative disease that impacts their motor abilities would be “satisfied” with an at-home follow-up visit? Did it have to take a deadly pandemic before we considered offering this service to patients with PD?

Cost of the Visit

In China, and in many areas around the world, DBS is a specialized service for which patients travel quite a distance to receive treatment. In the study by Xu et al.,³ the authors looked at the cost of a high-speed train, taxi, and registration fees for patients to travel to a follow-up visit after DBS surgery, and the return visit home (excluding overnight lodging in case they had to stay). The cost for patients to travel to urban academic centers for care is not a quality metric that hospitals or physicians use or publish on. One would have to ask if what we are doing is really “patient-centered,” or why isn't it? Hospitals will go to great lengths to expand by buying outlying centers and offices to “capture” patients, but the goal is never to reduce the burden of cost on the patient. Once the patient is part of the system, they often must travel a distance to the specialized hospital for specialty care.

Satisfaction With the Visit

Xu et al.³ reported that patients were satisfied with their virtual visit, which included the motor assessment and programming. Other studies have shown that patients

with PD appreciate the comfort and convenience of telemedicine.⁴⁻⁷ PD is a chronic, neurodegenerative disease, and long-term remote assessment could lift a large burden from these patients and their families.

Technology

The study presented by Xu et al. included a group of well-educated patients (almost half of them earned a college degree) and did not include the use of high-tech sensors for the motor evaluation. The potential application of large-scale patient tracking devices and apps for patient outcomes has been presented by others and would likely improve our understanding of the true outcomes of many neurosurgical interventions.^{8,9}

Telemedicine: The Return of the House Call

A doctor would at one time have visited the home of a sick person because it was better for the patient, the patient's family, and the public to have the patient sick at home. What was old is new again. The pandemic made it obvious that we can do what is best for the patient, the patient's family, and the public by servicing healthcare needs without asking patients to face the burden of traveling for their care. "But what will insurers pay for?" is the question we ask in trying to divine what the future of neurosurgery quality will be after the pandemic. This *Neurosurgical Focus* issue will reach an international audience of readers and contributors. The articles selected here are fortunately from around the world and offer eye-opening solutions for addressing improvements in neurosurgery quality.

Innovation in Neurosurgery Quality

My clinical specialty and academic interest is endoscopic spine surgery. I published a healthcare quality article in 2017 on how far patients travel for endoscopic spine surgery (about 100 miles on average at my institution), with the idea that a better measure for quality in healthcare might be a metric that better reflects the desires of patients.¹⁰ This *Neurosurgical Focus* issue on quality in neurosurgery is a collection of articles that are not on a new procedure or a new technology, but are all on a new way we can look at the challenges in quality in delivering neurosurgical care. The timing of the issue could not be better, because the coronavirus pandemic is essentially an evolutionary hurdle that neurosurgery processes can use to reboot how we do things. Operating rooms that allocate block time based on seniority or use paper charts might go extinct, while those that have transitioned to an electronic medical record and consider healthcare delivery systems

that look more like Amazon and FedEx will likely emerge stronger. The lesson from a case study of 22 patients with PD around Shanghai, China, is that during a nationwide lockdown, the care for patients with a chronic degenerative neurological disease did not have to cease—it could possibly have gotten better.

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Disclosures

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