

In Reply: Telemedicine in Neurosurgery: Lessons Learned From a Systematic Review of the Literature for the COVID-19 Era and Beyond

To the Editor:

We are grateful to the authors¹ for their interest in our article.² We agree with their additional comments. Telemedicine in neurosurgery is an emerging technology with both opportunities for improving patient access to care, as well as risks or potential pitfalls. The decision to schedule a patient for a neurosurgical telemedicine visit must be tailored to the individual patient's unique situation and needs.

A thorough consideration of the 4 principles of medical ethics advocated by Thomas Beauchamp and James Childress in their landmark book *Principles of Biomedical Ethics*^{3,4} may help to determine if a patient should be scheduled for a telemedicine visit or an in-person visit.

- 1) Principle of respect for autonomy (defined as a patient's right to make informed decisions about his or her health care)^{3,4}: Does the patient prefer to have a telemedicine visit or an in-person visit?
- 2) Principle of nonmaleficence (defined as doing no harm to the patient)^{3,4}: Is a telemedicine visit likely to miss critical history or physical exam findings for a given medical condition or patient situation? Could telemedicine result in a breach of protected health information?
- 3) Principle of beneficence (defined as being of benefit to the patient)^{3,4}: Does scheduling a telemedicine visit potentially expedite an urgently needed diagnosis and/or treatment? Does a telemedicine visit obviate the physical and emotional stress of transportation to clinic for patients with limited mobility?
- 4) Principle of justice (equitably distributing health care)^{3,4}: Does scheduling a telemedicine visit enable evaluation of patients in resource-limited areas, or resource-limited time periods, such as pandemics, who otherwise would not be able to be evaluated?

When there is any concern that a telemedicine visit is inadequate for patient evaluation, the patient should be directed to come for an in-person clinic visit. Similarly, if the patient is in need of urgent or emergent medical intervention, the patient should be directed to present to the emergency department.

A total of 14 mo after the beginning of the COVID-19 pandemic, the University of Miami Department of Neurosurgery conducted 41.9% of outpatient clinic visits via telemedicine during March 2021. Telemedicine is likely to remain a component of health-care delivery in the United States beyond the end of the COVID-19 public health emergency, as the





Centers for Medicare & Medicaid Services have permanently expanded payment for telehealth services in December of 2020.⁵ Given this reality, health-care providers must be leaders in selecting patients appropriately for telemedicine visits, as well as identifying, addressing, and improving the drawbacks of telemedicine.

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